AMPCO®

Models VSI/IVSI

Positive Pressure Venting Systems

Available in 1" Airspace &
1", 2", or 4"
Ceramic Insulation

c UL us LISTED

Ideal for discharging exhaust gases and fumes from boilers, heaters, ovens, engines, turbines and kitchen appliances.

TABLE OF CONTENTS

UNDERWRITERS LABORATORIES LISTINGS

Model VSI and IVSI in sizes 5" through 48" diameters have been tested and Listed (Safety Certified) by Underwriters Laboratories, Inc. (ULI) and bears the UL and/or c-UL logo signifying compliance with U.S. and/or Canadian standards. UL Listing product categories include:

USA
Grease Duct (UL1978)
Building Heating Appliance Chimney (UL103)
(Industrial) 1400° F Chimney (UL2561)
Type L Vent (Model IVSI only) (UL641)
Type B Gas Vent (UL441)

Canada
Grease Duct (UL1978)
540°C (1000°F) Industrial Chimney (ULC-S604)
760°C (1400°F) Industrial Chimney

UL file numbers for VSI and IVSI include MH6673 and MH11382

CODE AND STANDARD COMPLIANCE

NFPA (NFPA 31, 37, 54, 96, 211)
ICC (IMC, IFGC)
IAMPO (UMC)

Model VSI and IVSI have been approved by the City of New York Department of Buildings, Materials and Equipment Acceptance Division under the following

MEA numbers:	Model VSI	Model IVSI
Building Heating Appliance Chimney	MEA 132-90M	MEA 135-90M
1400° F Chimney	MEA 133-90M	MEA 181-90M
Grease Duct	MEA 134-90M	MEA 134-90M

ASSOCIATION/COMMITTEE PARTICIPATION

NFPA AHRI ASHRAE ASTM CSA UL SMACNA

TABLE OF CONTENTS

SYSTEM CONCEPT

AMPCO Model VSI and IVSI are modular, prefabricated piping systems which embody flanged joints designed for both quick assembly and pressure-sealing capabilities. They offer a combination of insulated piping components as well as the structural accessories needed for support and attachment to building structures. Expansion joints are available both in gasket designs and in pressure tight, all-welded bellows designs.

Standard gas-carrying piping parts are usable for a wide variety of applications:

- Chimneys and stacks for all types of building heating equipment.
- Chimneys for industrial ovens, furnaces, and processing equipment.
- Exhaust piping for engines or turbine units.
- Ducting in restaurants for compliance with Type 1 hood requirements.
- Ducting for heated air and combustion products.
- Ducting for light duty pollution control equipment.
- Venting for engine exhaust and other shipboard systems.
- Venting for offshore drilling rigs.

Complete Line of Fittings

Model VSI and IVSI are available in eighteen sizes, from 5" I.D. to 48" I.D. Fittings include various elbows, tees, supports and terminations, as well as a variety of accessory fittings designed to make installation simple and quick.

Each component is shipped complete and ready for installation. Each ordered part includes Inner Vee Bands, Outer Channel Bands and all the necessary hardware.

All items included with each order are listed in this catalog under the part description.

Exceeding the Requirements

AMPCO's, positive pressure system concept, far exceeds the requirements of codes and other manufacturers. Results of our testing programs illustrate this fact.

Leak Tests

AMPCO conducted system pressure testing (to 60" w.c.) against leakage in the presence of UL inspectors, and the results of these tests are impressive. Using the OSHA occupation standard-of-leakage rate of 50 parts per million over an eight hour period as criterion for acceptance, AMPCO was tested to a leakage rate of only .144 parts per million, or three-tenths of one percent (.3%) of the maximum allowable leakage rate per UL103 test standard.

Seismic Tests

We further demonstrated the superiority of the Model VSI and IVSI concept by conducting seismic load tests. These tests proved the structural integrity of our products under severe stress by showing that a guyed stack measuring 20 inches in diameter and exceeding 10 feet above the guying location (installed in strict accordance with the UL103 Listing) could withstand the rigors of all Seismic Zones.

Structural Tests

AMPCO recently tested for greater freestanding limits (termination height above a guide point). These tests, simulating stack performance under 110 mph wind conditions, again demonstrated the superiority of AMPCO products.

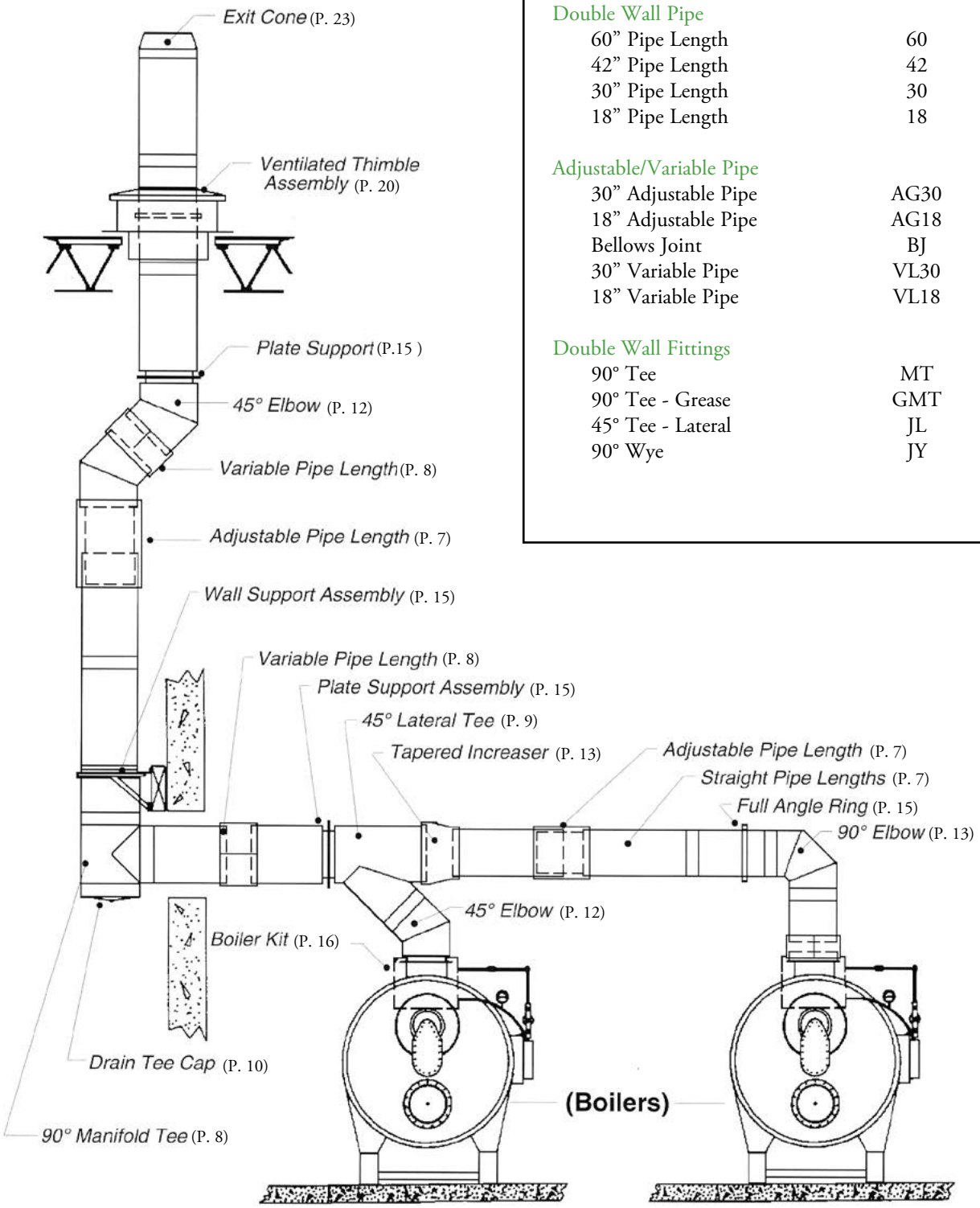
Skin Temperature Rise Tests

Among other things, UL103 covers the temperature rise limits of the surrounding combustible materials in an unenclosed chimney installation and it defines the test set-up to measure the actual temperature rise of those materials at the OEM recommended clearances. Our published Model IVSI skin temperatures were obtained during these tests.

GUIDE TO COMPONENT PARTS

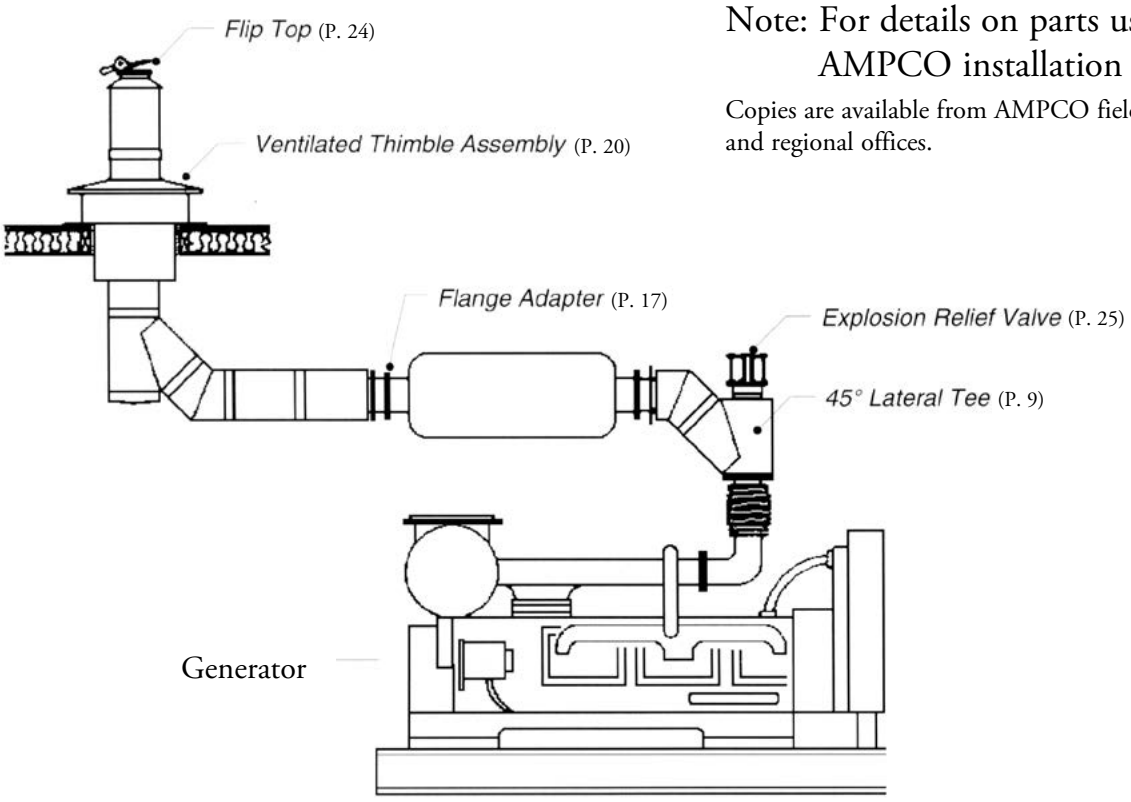
AMPCO®

Product	Code	Page
Joint Assembly Parts		
Overlapping- Vee Band	VB	5
Channel Band	CB	5
Half Channel Band	HCB	5
Low Temperature Sealant	P600	5
High Temperature Sealant	P2000	5
Double Wall Pipe		
60" Pipe Length	60	7
42" Pipe Length	42	7
30" Pipe Length	30	7
18" Pipe Length	18	7
Adjustable/Variable Pipe		
30" Adjustable Pipe	AG30	7
18" Adjustable Pipe	AG18	7
Bellows Joint	BJ	8
30" Variable Pipe	VL30	8
18" Variable Pipe	VL18	8
Double Wall Fittings		
90° Tee	MT	8
90° Tee - Grease	GMT	9
45° Tee - Lateral	JL	9
90° Wye	JY	10



GUIDE TO COMPONENT PARTS

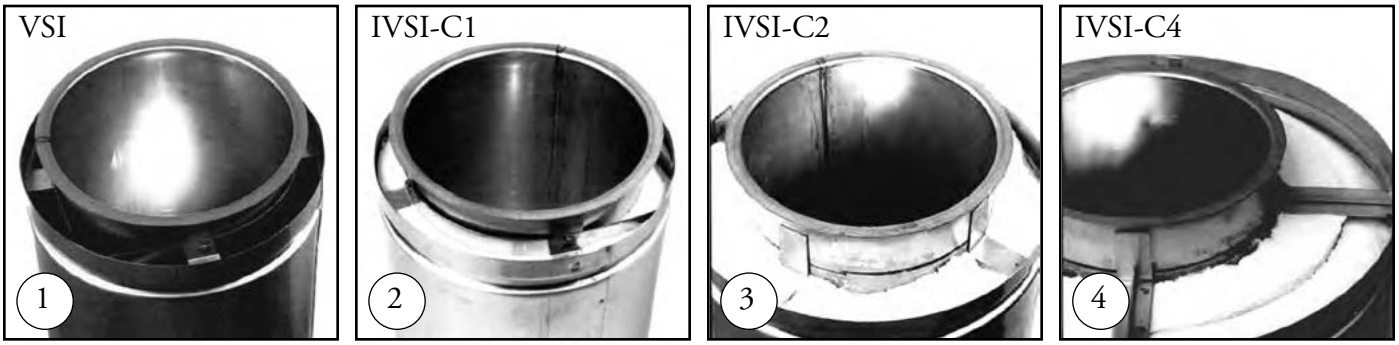
AMPCO®



Note: For details on parts usage, refer to the AMPCO installation instructions.

Copies are available from AMPCO field service representatives and regional offices.

Model VSI vs. Model IVSI



Ceramic Fiber insulation increases the diameter of the outer wall on Model IVSI-C2 and IVSI-C4 pipe and fittings. Shown in this sequence is the same 8-inch diameter inner pipe. (Photo 1) Without insulation the outside diameter of the pipe is 10-inches. (Photo 2) This is also true of the same pipe with a 1 -inch layer of insulation. (Photo 3) However, the same 8-inch pipe with 2-inch insulation results in an outside diameter of 12 inches. (Photo 4) Adding 4 inches of fiber insulation makes the diameter of the outer wall 16 inches.

Understanding Product Codes and Part Numbers

All parts manufactured by AMPCO are identified by a series of numbers and letters which describe their makeup and function.

Here is how to interpret the Part Number designation for Model VSI and IVSI products.

1. It begins with the pipe or fitting's Internal Diameter (in inches) such as 8, 22, 36, etc.
2. This is followed by the Model designation, VSI for air-insulated, or IVSI for parts that are fiber insulated.
3. Next, is the product's Material designation, such as 316 or 304/304. The first item indicates the makeup of the inner liner, while the second half indicates the material content of the outer wall, if stainless. If aluminized outer, the Part Number indicates inner material only.
4. Then, following a long dash, the product's Code name is listed, such as AG30, JY, or MVT. If the product is air insulated, the product identification ends with this Code.

   (For Product Code listings, refer to page 2.)
5. Finally, when a product is fiber insulated, a designation is added at the end to indicate Insulation Thickness. -C1 means a thickness of 1 -inch; -C2, 2-inches; and -C4, 4-inches.

   (For comparison, see photos above.)

Thus, the Ordered Part Number for a 30-inch Adjustable Pipe, with a 6-inch I.D., made of 304 Stainless Steel inner and Aluminized Steel outer, packed with 2-inch fiber insulation, is listed:

6IVSI304- AG30-C2

* **Note:** For products with reduction or increaser parts, the Part Number changes as follows:

MT and JL - Diameter of Body listed in front of Model VSI or IVSI.
Diameter of Snout listed in front of Code designation

Example - For a Manifold Tee with a 42" dia. Body and 30" dia. Snout:

42VSI304-30MT

OT and OS - Smaller diameter listed first (before Model designation) Larger diameter listed before Code designation

Example - For a Tapered Increaser with an 8" to 16"dia. Body:

8VSI304-16OT

JOINT ASSEMBLY PARTS

Overlapping Vee Band

Code: VB

Vee Band for connecting the inner 1/2 inch rolled flanges. Capable of holding 60" w.c. of pressure when properly installed.

Materials Available:

All Stainless Construction

Channel Band

Code: CB

Used to seal the Outer Jackets of two adjoining components.

(CB height is 4-3/4")

Materials Available:

Aluminized Steel / 316

Half Channel Band

Code: HCB

Used to seal the Outer Jackets of two adjoining components when the VB must remain open (such as PA's). (HCB height is 2-1/16")

Materials Available:

Aluminized Steel / 316

Notes: (VB)

1. VB's are one or two piece design. Included with pipe.
2. Model VSI part used for all IVSI applications.

Notes: (CB, HCB)

1. Fiber insulation provided for IVSI models.

Low Temperature Sealant

Code: P600

High Temperature Sealant

Code: P2000

Depending upon application, either AMPCO's low or high-temperature sealants are applied to the VB before connecting two Inner Pipes at installation.

As designated, P600 Sealant is for 600° F maximum flue gas temperatures, and also for exterior weathering of pipe, while P2000 is capable for flue gases up to 2,000° F (Not to be used externally)

Sealant Coverage

Expected Number of Joints Sealed Per Tube

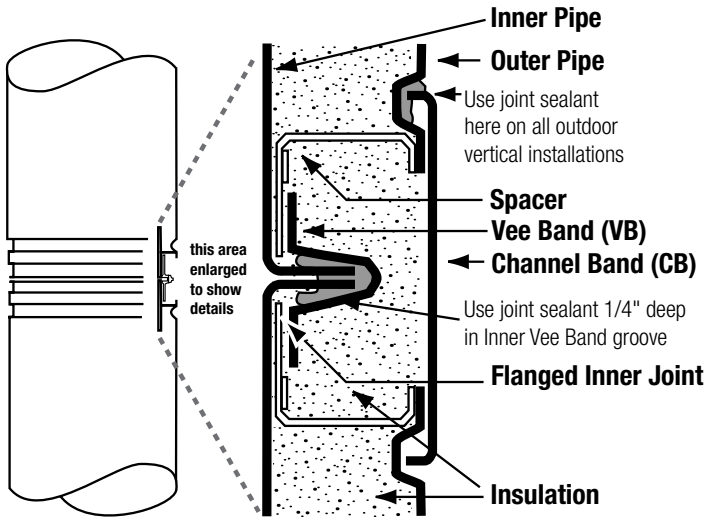
Inner Dia. (inches)	P600 & P2000
5/6	10
8/10	9
12	8
14/16	7
18/20	6
22/24	5
26/28	4
30/32	3
36	2
42/48	1

The Four Easy Steps to Joint Assembly

For all AMPCO pipe and fittings, the flange-to-flange inner pipe joints are identical for each pipe inside diameter.

Temperature of gases carried in the system determines the proper sealant used.*

As shown in the adjoining illustration and photos, assembly is accomplished in four easy steps, using only standard tools.



*See Grease Duct, Boiler Stack, or Engine Exhaust instructions for correct sealant usage.

Step 1
Fill Inner Vee Band (VB) with proper sealant.

Step 2
Position Inner VB below flange of pipe or fitting.

Step 3
Mate flanges of two pipes. Position Inner VB over both flanges and tighten.

Step 4
Position Outer Channel Band around outer casing. Align with pipe grooves and tighten.

DOUBLE WALL ADJUSTABLE PIPE

Straight Pipe Lengths

Codes: 60, 42, 30, 18

Standard pipe lengths for all AMPCO exhaust systems.

*Materials Available :

304/ALZ | 316/ALZ | 304/304 | 316/316

- 60” lengths available in 8” dia to 14” dia, all models, ALZ outer only
- 42” lengths available in:
  - 6” dia. through 32” I.D., VSI and lVSI-C1
  - 6” dia. through 28” I.D., IVSI-C2
  - 6” dia. through 24”I.D., IVSI-C4
- 18” & 30” lengths available in all Inner diameters (5”-48”) of all products (VSI, IVSI-C1, IVSI-C2, and IVSI-C4).

Ordered Part Includes:

Pipe, plus one VB and one CB.

Notes:

1. Special pipe lengths from 5” to 60” available upon request.
2. K Factors (Where L = pipe length in feet and D = pipe diameter in inches)

a. For Boiler Stacks and Chimneys:

$$K = 0.30 \frac{L}{D}$$

b. For Diesel and Turbine Exhausts and Grease Ducts:

$$K = 0.25 \frac{L}{D}$$

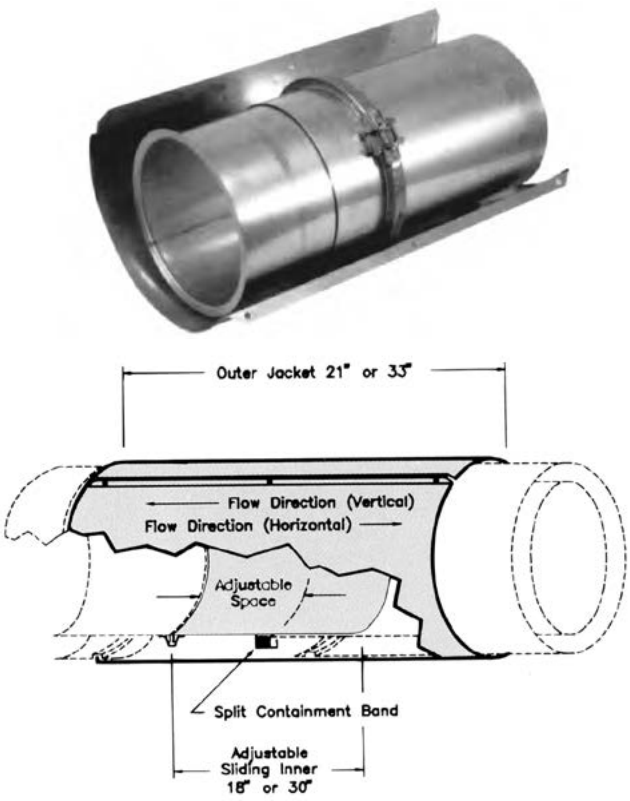
e.g. for 50 feet of 10 inch diameter pipe

$$K = 0.25 \frac{50}{10} = 1.25$$

Adjustable Pipe Lengths

Codes: AG30, AG18

Fills odd dimensions and compensates for expansion between two fixed points on low pressure applications.



*Materials Available:

304/ALZ | 316/ALZ | 304/304 | 316/316

Ordered Part Includes:

Pipe, plus one 30” or 18” inner Slip Section, one TSU, one Packing Seal, one two-piece Compression Band, one two-piece Containment Ring, one two-piece Outer Jacket, and one VB.

Fiber insulation provided for IVSI models.

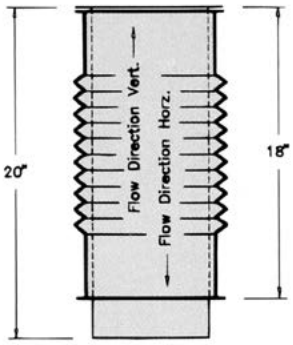
Notes:

1. Minimum installed length is 4”.
2. AG 18 not available for 28” diameter and above.
3. Maximum installed space is when the inner slip section protrudes at least 1/2 pipe diameter into the adjacent pipe.
4. Flow Resistance Factor (K) is the same as insulated pipe lengths.

Lined Bellows Joint

Code: BJ

Provides a pressure tight expansion joint for engine exhaust and other high pressure applications.



Materials Available:

316/316	316/ALZ

Ordered Part Includes:

BJ, plus one Liner, one Outer Jacket (IVSI only), and one VB.

Fiber insulation provided for IVSI models.

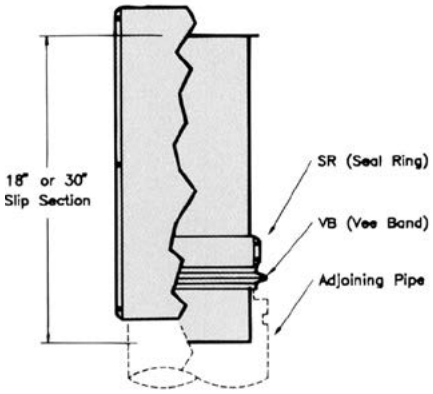
Notes:
1. Optional to standard adjustable pipe lengths on low pressure systems.
2. Liner protects Bellows but limits movement to liner expansions only.
3. Flow Resistance Factor (K) is the same as insulated pipe.

Variable Pipe Lengths

Codes: VL30, VL18

Fills odd dimensions between standard lengths. (Not used to compensate for thermal expansion.)

- VL30 fills 4"- 26" space.
- VL18 fills 4"-14" space.



Materials Available:

304/ALZ	316/ALZ	304/304	316/316

Ordered Part Includes:

VL30 or VL18, plus one 30" or 18" Inner Slip Section, one two-piece Outer Jacket, one SR, and one VB.

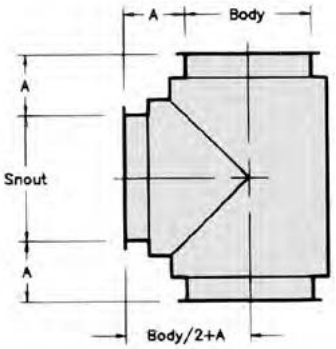
Fiber insulation provided for IVSI models.

Notes:
1. The SR is sealed with supplied sealant, not allowing the VL to compensate for expansion.
2. Flow Resistance Factor (K) is the same as insulated pipe.

90° Manifold Tee

Code: MT

Joins vertical and horizontal sections to affect a change of direction. Also provides for connection of drain or inspection fittings.



Dimension A		
VSI/IVSI-C1	IVSI-C2	IVSI-C4
4"	5"	7"

Materials Available:

304/ALZ	316/ALZ	304/304	316/316

Ordered Part Includes:

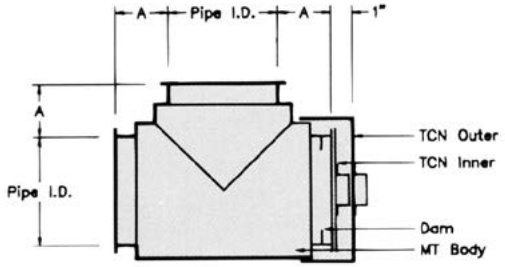
MT, plus one VB for the body diameter, one VB for the snout diameter, and one CB for the body diameter.

Notes:
1. Use TCN/NTAC for clean out or inspection, or TC for drain at base of vertical stack.
2. Snout available in any standard diameter equal to or smaller than the body diameter.
3. K = 1.25 Flow Resistance Factor

90° Grease Duct Tee

Code: GMT

Part MT with dam added for protection against fluids running out while cleaning. Used at 90 deg. turns only.



Dimension A		
VSI/IVSI-C1	IVSI-C2	IVSI-C4
4"	5"	7"

Materials Available:

304/ALZ	316/ALZ	304/304	316/316

Ordered Part Includes:

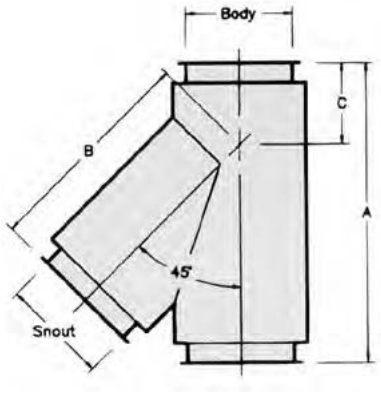
GMT, plus one TCN, two VB's and one CB.

Notes:
1. K = 1.25 Flow Resistance Factor

45° Lateral Tee

Code: JL

Provides a low resistance entry into manifolds. Combine with EL45 for low resistance 90° direction change.



Materials Available:

304/ALZ	304/ALZ	304/ALZ	304/ALZ

Ordered Part Includes:

JL, plus one VB for the body diameter, one VB for the snout diameter, and one CB for the body diameter.

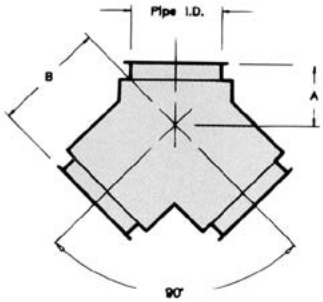
Notes:
1. Snout available in any standard diameter equal to or smaller than the body diameter.
2. K = 0.4 Flow Resistance Factor

Product				Dimensions		
O. D.	Pipe I. D.			Inches		
	VSI IVSI-1	IVSI C2	IVSI C4	A	B	C
7	5	–	–	19½	13¾	5¾
8/9	6	5	–	19½	13¾	5¾
10	8	6	–	22⅞	16⅝	6¼
12	10	8	–	24 1/16	19	5 1/16
14	12	10	6	26 13/16	21 7/16	5½
16	14	12	8	29¾	23⅞	5⅞
18	16	14	10	32 9/16	26¼	6 9/16
20	18	16	12	35⅜	28¾	6¾
22	20	18	14	38 5/16	31 1/16	7⅛
24	22	20	16	43⅞	35⅞	8
26	24	22	18	43⅞	35⅞	8
28	26	24	20	49 9/16	40¾	8 13/16
30	28	26	22	49 9/16	40¾	8 13/16
32	30	28	24	55 5/16	45 9/16	9⅛
34	32	30	26	55 5/16	45 9/16	9⅛
36	–	32	28	60 13/16	50⅜	10 7/16
38	36	–	30	60 13/16	50⅜	10 7/16
40	–	36	32	69 15/16	58¼	11¾
44	42	–	36	69 15/16	58¼	11¾
46	–	42	–	79 3/16	66⅛	13
50	48	–	42	79 3/16	66⅛	13
52	–	48	–	88⅜	74¼	14 7/16
56	–	–	48	88⅜	74¼	14 7/16

90° WYE

Code: JY

Provides low pressure drop for joining appliances in the horizontal and vertical position.



Materials Available:

304/ALZ | 316/ALZ | 304/304 | 316/316

Ordered Part Includes:

JY, plus two VB's and one CB.

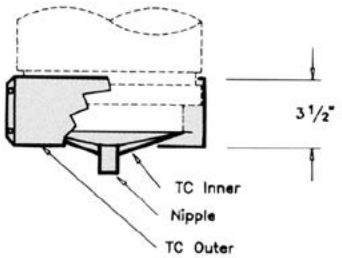
Notes:
1. All openings are the same diameter.
2. Can be used with TCN to provide a single clean out toward each 90° direction change.
3. Use OT or OS as needed for smaller branch connections.
4. K = 0.6 Flow Resistance Factor

Product				Dimensions	
O. D.	Pipe I. D.			inches	
	VSI IVSI-C1	IVSI C2	IVSI C4	A	B
7	5	–	–	4⅜	9
8/9	6	5	–	4⅜	9
10	8	6	–	5 1/16	10
12	10	8	–	5	11
14	12	10	6	5½	12
16	14	12	8	5⅞	13
18	16	14	10	6⅜	14
20	18	16	12	6⅝	15
22	20	18	14	7⅛	17
24	22	20	16	8	19
26	24	22	18	8	19
28	26	24	20	8¾	22
30	28	26	22	8¾	22
32	30	28	24	9⅜	24
34	32	30	26	9⅜	24
36	–	32	28	10½	27
38	36	–	30	10½	27
40	–	36	32	11¾	31
44	42	–	36	11¾	31
46	–	42	–	13	34
50	48	–	42	13	34
52	–	48	–	14¼	38
56	–	–	48	14¼	38

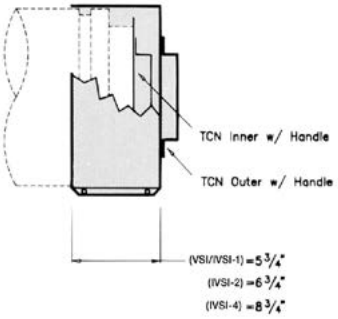
Drain Tee Cap

Code: TC & TCN

The Drain Tee Cap provides a drain at the base of a vertical chimeny when connected to the MT or J



Ordered Part Includes: TC, plus one 1" N.P.T. Nipple (5"-20" sizes), or 2" N.P.T. Nipple (22"-48" sizes), one Inner Section, one Outer Jacket, and one VB.Fiber insulation provided for IVSI models.



Materials Available (both TC and TCN):

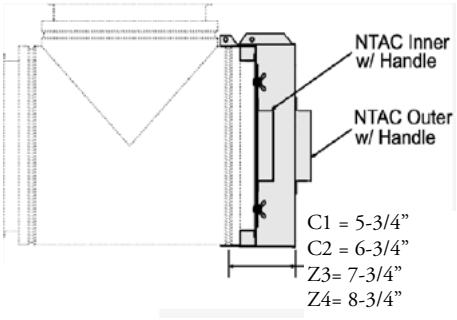
304/ALZ | 316/ALZ | 304/304 | 316/316

Ordered Part Includes: TCN, plus one Inner Section (with handle), one Outer Jacket (with handle) and one VB. Fiber Insulation provided for IVSI Models.

No Tool Access Cap

Code: NTAC

Provides for toolless Cleanout and/or dam when connected to MT or JL.



Materials Available:

316/316 | 304/ALZ | 316/ALZ | 304/304

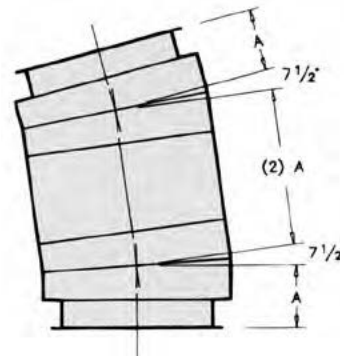
Ordered Parts Include:

NATC, plus one dam, insulation, shield, outer cover and one VB. Fiber insulation provided for IVSI models.

15° Elbow

Code: EL 15

Two-piece Elbow can establish many different degrees when combined with other standard Elbows.



Materials Available:

304/ALZ | 304/ALZ | 304/ALZ | 304/ALZ

Ordered Part Includes:

Two 7 1/2° Elbows, plus two CB's, and two VB's.

Notes:

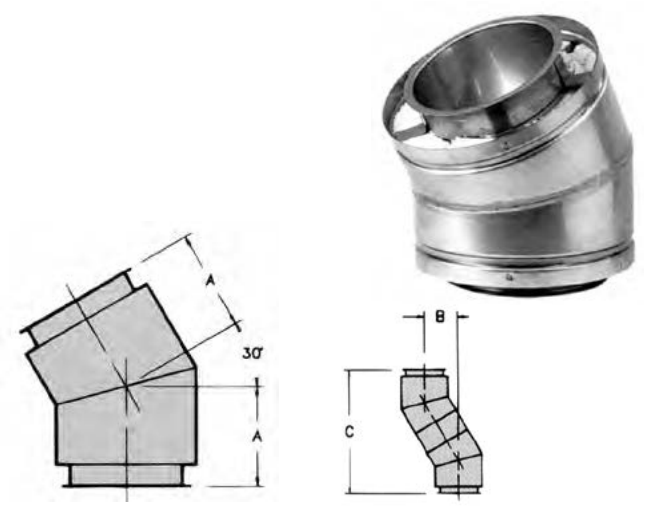
1. K = 0.06 Flow Resistance Factor

Product				Dim.
O. D.	Pipe I. D.			Inches
	VSI IVSI-1	IVSI C2	IVSI C4	A
7	5	–	–	4 3/16
8/9	6	5	–	4 3/16
10	8	6		4 1/4
12	10	8	–	4 5/16
14	12	10	5/6	7 7/16
16	14	12	8	4 1/2
18	16	14	10	4 9/16
20	18	16	12	4 5/8
22	20	18	14	4 11/16
24	22	20	16	4 3/4
26	24	22	18	4 13/16
28	26	24	20	4 7/8
30	28	26	22	4 15/16
32	30	28	24	5
34	32	30	26	5 1/16
36	–	32	28	5 1/8
38	36		30	5 3/16
40	–	36	32	5 5/16
44	42	–	36	5 3/8
46	–	42	–	5 1/2
50	48	–	42	5 9/16
52	–	48	–	5 9/16
56	–	–	48	5 9/16

30° Elbow

Code: EL30

Used for a vertical or horizontal direction change of 30°.



Materials Available:

304/ALZ | 316/ALZ | 304/304 | 316/316

Ordered Part Includes:

EL30, plus one CB and one VB.

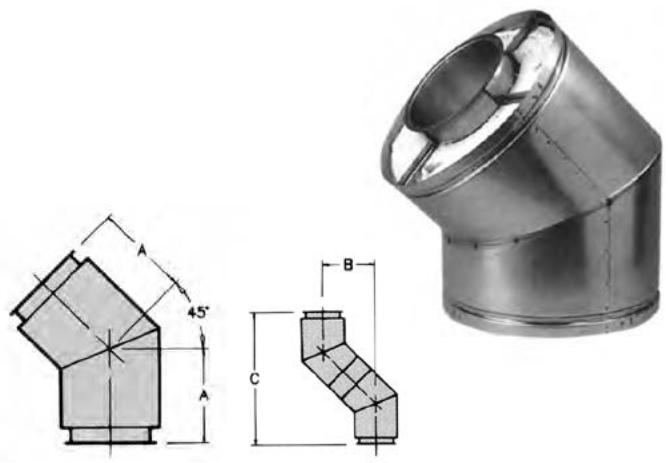
Notes:
1. K = 0.12 Flow Resistance Factor

Product				Dimensions		
O. D.	Pipe I. D.			Inches		
	VSI IVSI-C1	IVSI C2	IVSI C4	A	B	C
7	5	–	–	6⅛	6⅛	22⅜
8/9	6	5	–	6⅛	6⅛	22⅞
10	8	6	–	6⅜	6⅜	23⅞
12	10	8	–	6 11⁄16	6 11⁄16	24⅞
14	12	10	5/6	7 5⁄16	7 5⁄16	27¼
16	14	12	8	7⅞	7⅞	29⅜
18	16	14	10	8¼	8¼	30⅜
20	18	16	12	8⅝	8⅝	31⅜
22	20	18	14	9⅛	9⅛	34⅛
24	22	20	16	9⅜	9⅜	35
26	24	22	18	10 1⁄16	10 1⁄16	37½
28	26	24	20	10 5⁄16	10 5⁄16	38½
30	28	26	22	11	11	40⅞
32	30	28	24	11¼	11¼	41⅞
34	32	30	26	11⅞	11⅞	44⅜
36	–	32	28	12 3⁄16	12 3⁄16	45⅜
38	36	–	30	12⅞	12¾	47¾
40	–	36	32	13⅛	13⅛	48⅞
44	42	–	36	14	14	52½
46	–	42	–	14¼	14¼	53⅜
50	48	–	42	14 3⁄16	14 3⁄16	56 7⁄16
52	–	48	–	15 5⁄16	15 5⁄16	57⅛
56	–	–	48	15 5⁄16	15 5⁄16	57⅛

45° Elbow

Code: EL45

Used for a vertical or horizontal direction change of 45°.



Materials Available:

304/ALZ | 304/ALZ | 304/ALZ | 304/ALZ

Ordered Part Includes:

EL45, plus One CB and one VB.

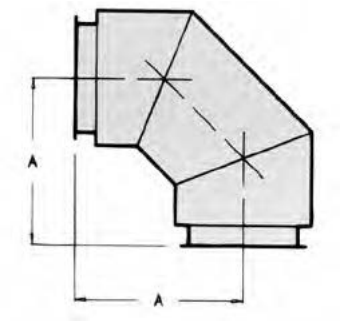
Notes:
1. K = 0.15 Flow Resistance Factor

Product				Dimensions		
O. D.	Pipe I. D.			Inches		
	VSI IVSI-C1	IVSI C2	IVSI C4	A	B	C
7	5	–	–	8½	12	29
8/9	6	5	–	8½	12	29
10	8	6	–	8 15⁄16	12⅝	30⅞
12	10	8	–	9 5⁄16	13 3⁄16	31⅞
14	12	10	5/6	10¼	14½	35
16	14	12	8	10 11⁄16	14⅜	35⅝
18	16	14	10	11⅜	16 7⁄16	39⅜
20	18	16	12	12 1⁄16	17 1⁄16	41⅛
22	20	18	14	13	18⅜	44¼
24	22	20	16	13 3⁄16	18 13⁄16	45½
26	24	22	18	14 7⁄16	20¼	48⅛
28	26	24	20	14⅞	21 1⁄16	50⅞
30	28	26	22	15 11⁄16	22 3⁄16	53½
32	30	28	24	16¼	22 15⁄16	53⅜
34	32	30	26	17	24	58
36	–	32	28	17 7⁄16	24¾	59⅞
38	36	–	30	18⅜	25 15⁄16	62⅜
40	–	36	32	18⅞	26 11⁄16	64½
44	42	–	36	19 11⁄16	27⅞	67
46	–	42	–	20⅛	28 7⁄16	68⅜
50	48	–	42	21 7⁄16	30 5⁄16	74⅞
52	–	48	–	21 7⁄16	30 7⁄16	74⅞
56	–	–	48	21 7⁄16	30 5⁄16	74⅞

90° Elbow

Code: EL90

Used for a vertical or horizontal direction change of 90°.



Materials Available:

304/ALZ | 316/ALZ | 304/304 | 316/316

Ordered Part Includes:

EL90, plus one CB and one VB.

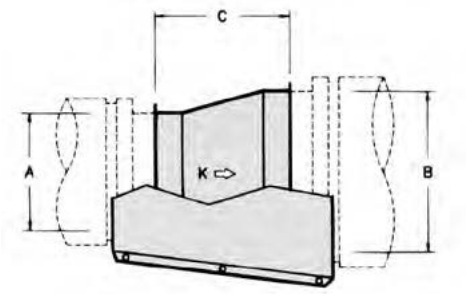
Notes:
1. K = 0.30 Flow Resistance Factor

Product				Dim.
O. D.	Pipe I. D.			Inches
	VSI IVSI-1	IVSI C2	IVSI C4	A
7	5	–	–	11½
8/9	6	5	–	11½
10	8	6	–	12½
12	10	8	–	13½
14	12	10	5/6	14½
16	14	12	8	15½
18	16	14	10	16½
20	18	16	12	17½
22	20	18	14	18½
24	22	20	16	19½
26	24	22	18	20½
28	26	24	20	21½
30	28	26	22	22½
32	30	28	24	23½
34	32	30	26	24½
36		32	28	25½
38	36	–	30	26½
40	–	36	32	27½
44	42	–	36	29½
46	–	42	–	30½
50	48	–	42	32½
52	–	48	–	33½
56	–	–	48	35½

Tapered Increaser/Reducer

Code: OT

Used when a pipe diameter change is required.



Materials Available :

304/ALZ | 316/ALZ | 304/304 | 316/316

Dimensions:

A = Smaller Diameter

B = Larger Diameter

C = Installed Length = [(B-A) 2] +2 (see Note 1 below)

Example:

Installed Length for 12VSI304-18OT equals [(18-12)2] + 2 = 14".

Ordered Part Includes:

OT, plus one two-piece Outer Jacket, and one VB for smaller diameter.

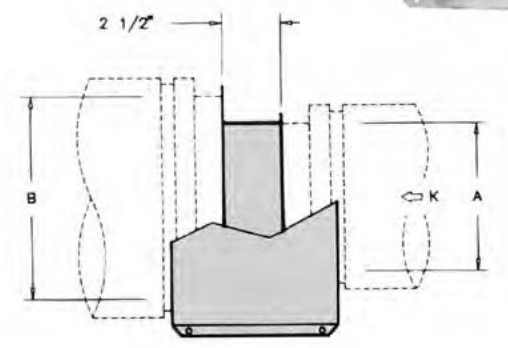
Fiber insulation provided for IVSI models.

Notes:
1. Installed length shall not be greater than longest available straight pipe length (see page 7) for each diameter.
2. $K = N [1 - (A/B)^2]^2$ where N = 0.47 for one step OT
   N = 0.53 for two step OT

Step Increaser/Reducer

Code: 0S

Used when pipe diameter change is required in a small space.



Materials Available:

316/ALZ | 316/316

Ordered Part Includes:

OS (Inner Stepped Pipe), plus one two-piece Outer Jacket, and one VB for the smaller diameter.

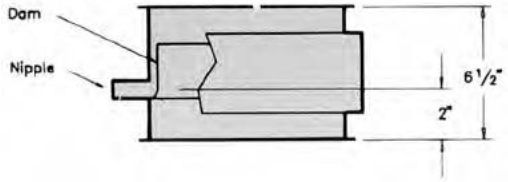
Fiber insulation provided for IVSI models.

Notes:
1. This is a non-structural part; use only if OT will not fit within the allowable space.
2. $K = N [1 -(A/B)^2]^2$

Drain Section

Code: DS

Used with open stack terminations for draining off rain water from inside vertical or horizontal flue.



Materials Available:

304/ALZ | 316/ALZ | 304/304 | 316/316

Ordered Part Includes:

DS, plus one Drain Dam within the pipe length, one 1" Nipple, one CB, and one VB.

Notes:
1. K = 0.25 Flow Resistance Factor

Angle Rings

Codes: HR & FR

Used for guiding and/or supporting horizontal installations.

Half Ring (HR)

Full Ring (FR)

Materials Available:
Painted Steel

Notes:
1. Model VSI part used for IVSI-C1 applications.

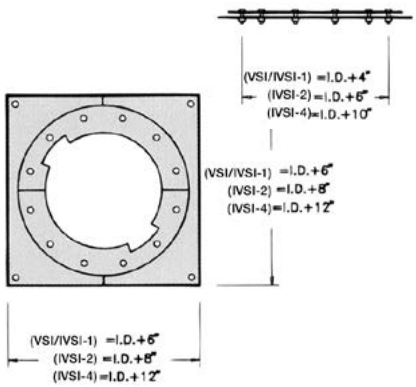
Product (pipe I. D.)			Dimensions (inches) - HR				
VSI	IVSI-C2	IVSI-C4	Bolt Hole Circle	I.D. of Ring	No of Holes (HR)	Size of Angles	Angle of Holes
5	–	–	9	7⅛	6	(1)	45
6	5		10	8⅛	6	(1)	45
8	6		12	10⅛	6	(1)	45
10	8		14	12⅛	6	(1)	45
12	10	6	16	14⅛	6	(1)	45
14	12	8	18	16⅛	6	(1)	45
16	14	10	20	18⅛	6	(1)	45
18	16	12	22	20⅛	6	(1)	45
20	18	14	24	22⅛	6	(1)	45
22	20	16	26	24⅛	10	(2)	22.5
24	22	18	28	26⅛	10	(2)	22.5
26	24	20	30	28⅛	10	(2)	22.5
28	26	22	32	30⅛	10	(2)	22.5
30	28	24	34	32⅛	10	(2)	22.5
32	30	26	36	34⅛	10	(2)	22.5
–	32	28	38	36⅛	10	(2)	22.5
36	–	30	40	38⅛	10	(2)	22.5
–	36	32	42	40⅛	10	(2)	22.5
42	–	36	46	44⅛	10	(2)	22.5
–	42	–	48	46⅛	10	(2)	22.5
48	–	42	52	50⅛	10	(2)	22.5
–	48	–	54	62⅛	10	(2)	22.5
–	–	48	58	66⅛	10	(2)	22.5

(1) Size of Angles = 1½ x 1½ x 3/16
(2) Size of Angles = 2 x 2 x 3/16

Plate Support Assembly

Code: PA

Used for supporting the load of the stack, and as a fixed point anchor near fittings.



Materials Available:
Painted Steel

Ordered Part Includes:

Split (square) plate, one CF, two HCB's and hardware.

Plate Thickness:

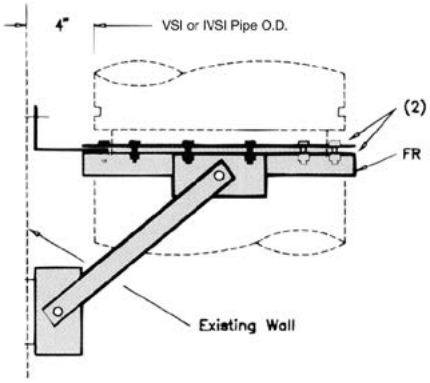
0.188" for sizes 6" through 20" diameters
0.250" for sizes 22" through 36" diameters
0.375" for sizes 42" through 48" diameters

Notes:
1. Two 316 Stainless Steel HCB's should be ordered separately for stainless steel outer wall projects.
2. PA plates fabricated from Stainless Steel is available upon request and is non-returnable. Allow extra manufacturing time.

Wall Support Assembly

Code: WA

"Limited" support assembly with factory-supplied bracing.



Materials Available:
Painted Steel

Ordered Part Includes:

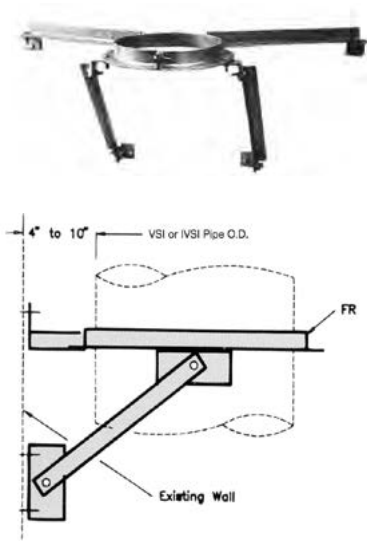
One FR, two CF's, two HCB's, five brackets, two struts, and all hardware except connection at wall.

Notes:
1. Assembly will maintain a 4" clearance between pipe O.D. and supporting structure.

Wall Guide Assembly

Code: WG

Same use as FIR, but with factory-supplied bracing.



Materials Available:

Painted Steel

Ordered Part Includes:

One FR, four struts, and six brackets.

Notes:

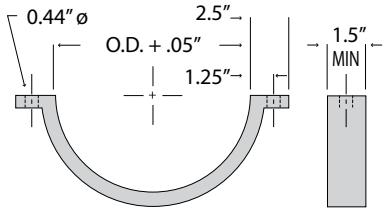
1. Assembly will maintain a 2" to 10" clearance between pipe O.D. and supporting structure.
2. Model VSI part used for IVSI-1 applications.

Support Strap

Code: SS

Available in 5 through 26" PS only.

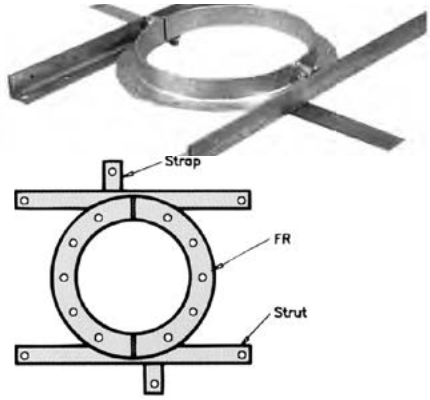
0.188" Thick Hot Rolled Steel



Floor Guide Assembly

Code: FG

Same use as FR, but with factory-supplied bracing for use at floor level.



Materials Available:

Painted Steel

Ordered Part Includes:

One FR, two struts, and two straps.

Notes:

1. Maximum hole through floor should not exceed the pipe O.D. plus 8".
2. Model VSI part used for IVSI-1 applications.

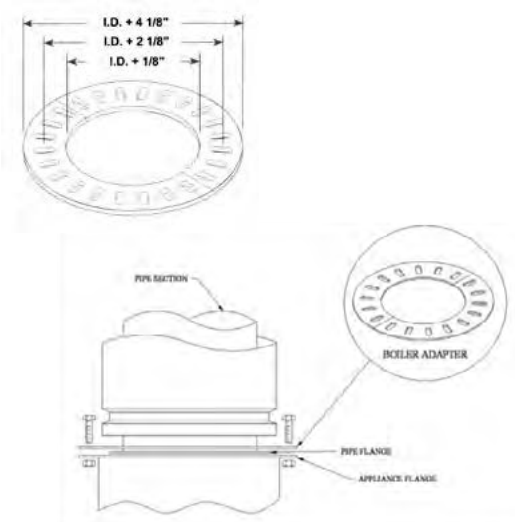
Pipe I.D. (inches)			Material (inches)	
VSI	IVSI-C2	IVSI-C4	Strut Length	Strut Size
5	–	–	17½	(1)
6	–	–	18	(1)
–	5	–	19½	(1)
8	6	–	21	(1)
–	–	5	22½	(1)
10	8	–	24	(1)
12	10	6	27	(1)
14	12	8	29	(2)
16	14	10	30	(2)
18	16	12	32	(2)
20	18	14	33	(2)
22	20	16	34½	(3)
24	22	18	36	(3)
26	24	20	37	(3)
28	26	22	38	(3)
30	28	24	39½	(3)
32	30	26	41	(3)
–	32	28	42½	(3)
36	–	30	44	(3)
–	36	32	46	(3)
42	–	–	48	(3)
–	42	36	50	(3)
–	–	42	52	(3)
48	–	–	53	(3)
–	48	–	54	(3)
–	–	48	58	(3)

(1) Steel Angle, 1½" x 1½" x 3/16"
(2) Steel Angle, 1¾" x 1¾" x 3/16"
(3) Steel Angle, 2" x 2" x 3/16"

Boiler Kit Adapter

Code: BK

Used to transition to a flanged appliance. Features 24 connection slots to mate 4, 6, 8 or 12 bolt hole patterns



24 holes .375 x 1.0 at 15 degrees
Constructed of 1/4" hot-rolled steel.

Materials Available:

Painted Steel

Ordered Part Includes:

Two Half Boiler Adapter Flange Plates

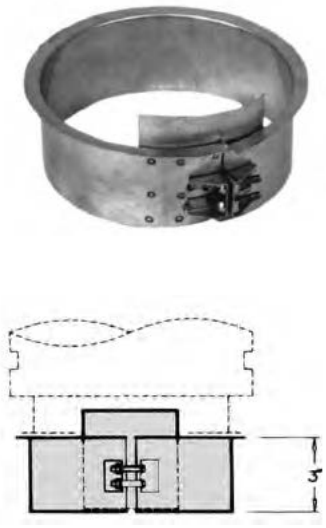
Notes:

Order HCB's separately if needed.

Seal Ring

Code: SR

Used for non-welded attachment to appliances having an unflanged or collar outlet.



Materials Available:

304/ALZ	316/ALZ	304/304	316/316

Ordered Part Includes:

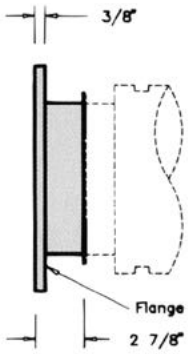
SR, plus one VB, one CB, and hardware.

Notes:
1. Model VSI part used for all IVSI applications.

Flange Adapter

Code: FD

Provides a rigid connectic to a 125 lb. or 150 lb ANSI flange.



Materials Available:

316/ALZ	316/316

Ordered Part Includes:

Flange welded to TS, one special CB, and one VB.

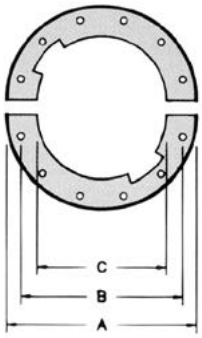
Fiber insulation provided for IVSI models.

Product	Dimensions (inches)			
Pipe I.D.	No. of Bolts	Bolt Hole Dia.	Flange O.D.	Bolt Circle
5	8	⅞	10	8½
6	8	⅞	11	9½
8	8	⅞	13½	11¾
10	12	1	16	14¼
12	12	1	19	17
14	12	1⅛	21	18¾
16	16	1⅛	23½	21¼
18	16	1¼	25	22¾
20	20	1¼	27½	25
22	20	1⅜	29½	27¼
24	20	1⅜	32	29½
28	28	1⅜	36½	34
30	28	1⅜	38½	36
32	28	1⅜	41¾	38½
36	32	1⅜	46	42¾
42	36	1⅜	53	49½
48	44	1⅜	59½	56

Clamp Flange

Code: CF

Can be used as an attachment to flanged equipment (also part of PA and WA).



A = Flange O.D.
VSI/IVSI-1 = I.D. + 5”
C2 = I.D. + 7”
C4 = I.D. + 11”

B = Bolt Hole Circle
VSI/IVSI-1 = I.D. + 4”
C2 = I.D. + 6”
C4 = I.D. + 10”

C = Flange I.D.
VSI/IVSI-1 = I.D. + 1/2”
C2, C4

Materials Available:

Painted Steel

Ordered Part Includes:

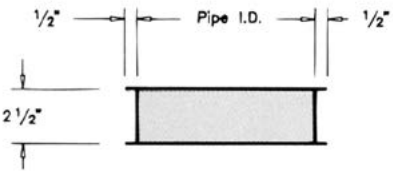
Two half clamp flange plates.

Notes:
1. 0. 129” minimum thickness for sizes 5” to 8” diameters.
2. 0.188” minimum thickness for sizes 10” through 36” diameters.
3. 0.275” minimum thickness for sizes 38” through 48” diameters.
4. Model VSI part used for IVSI-1 applications.
5. Order HCB’s separately if needed.

Flanged Hood Transition

Code: TS

Used on standard appliances such as kitchen hood exhausts. Flanged at both ends.



Materials Available :

304/ALZ	316/ALZ	304/304	316/316

Ordered Part Includes:

TS, plus one CB and one VB.

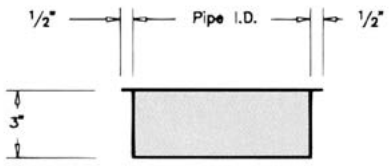
Fiber insulation provided with IVSI models.

Notes:
1. Can be used for welding to equipment or transitions fabricated in the field.

Unflanged Hood Transition

Code: TSU

Used on standard appliances such as kitchen hood exhausts.
Flanged at one end.



Materials Available:

304/ALZ	316/ALZ	304/304	316/316

Ordered Part Includes:

TSU, plus one CB and one VB.

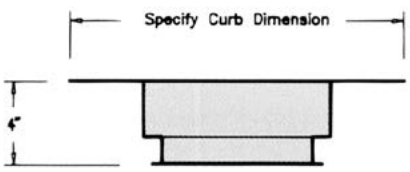
Fiber insulation provided with IVSI models.

Notes:
1. Can be used for welding to equipment or transitions fabricated in the field.

Fan Adapter

Code: FA

Used for connection to an "up-blast" kitchen exhaust fan.



Materials Available:

304/ALZ	316/ALZ	304/304	316/316

Ordered Part Includes:

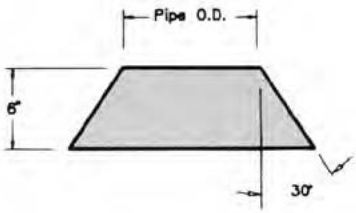
FA, plus one VB and one CB.

Notes:
1. Dimension of square plate (which is sandwiched between curb and fan housing) must be specified when ordering.

Storm Collar

Code: SC

Used above the TF and PTF for complete weatherization above the roof.



Materials Available:

ALZ or Galv.	304	316

Ordered Part Includes:

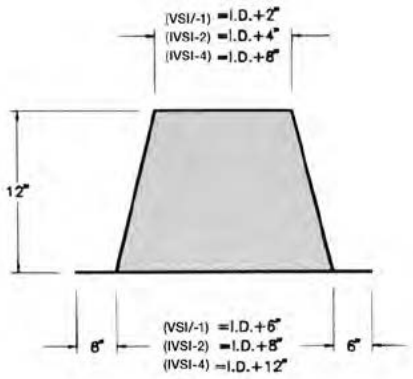
SC, plus hardware.

Notes:
1. Requires P600 sealant when installing.
2. Model VSI part used for IVSI-1 applications.

Tall Flashing

Code: TF

Used in conjunction with SC for weatherization at the roof.



Materials Available:

ALZ or Galv.	304	316

Ordered Part Includes:

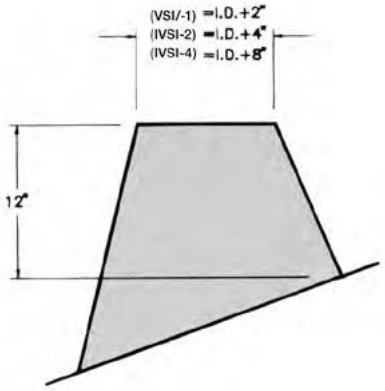
TF only.

Notes:
1. Use limited to installations where complete roof penetration is non-combustible.
2. Model VSI part used for IVSI-1 applications.

Pitched Tall Flashing

Code: PTF

Same function as TF, except for use on a pitched roof.



Materials Available:

ALZ or Galv.	304	316

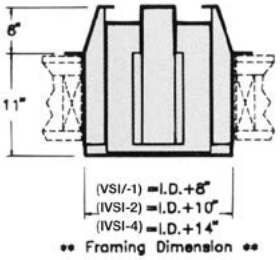
Ordered Part Includes:

PTF only (specify pitch when ordering).

Notes:
1. Part is non-returnable and may require extra manufacturing time.
2. Use limited to installations where complete roof penetration is non-combustible.
3. Model VSI part used for IVSI-1 applications.

Ventilated Thimble
Code: THB

Body part of MVT, MRS, and PVT. Also can be used by itself for a wall penetration.



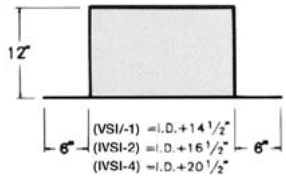
Materials Available:

Galvanized Steel

Model VSI part used for IVSI-C1 applications.

Ventilated Tall Flashing
Code: VTF

Encloses the THB, offers protection from weather and moisture penetration. Part of MVT, MRS

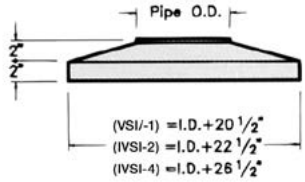


Materials Available :

ALZ or Galv	304	316

Ventilated Storm Collar
Code: VSC

Protects the VTF from weather/moisture penetration. Part of MVT, MRS, PVT. Can be used for wall penetration along with a THB



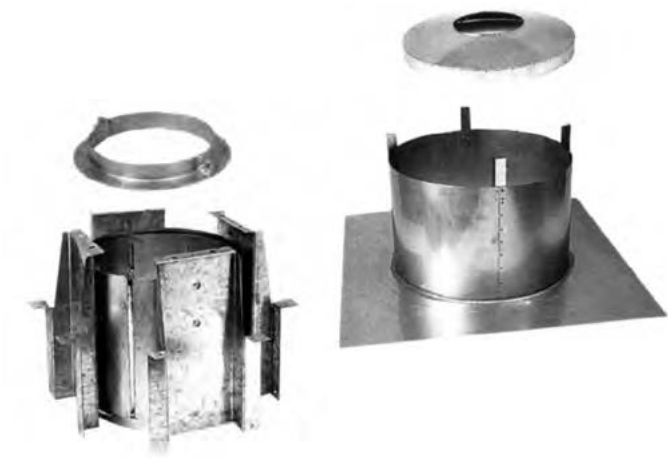
Materials Available:

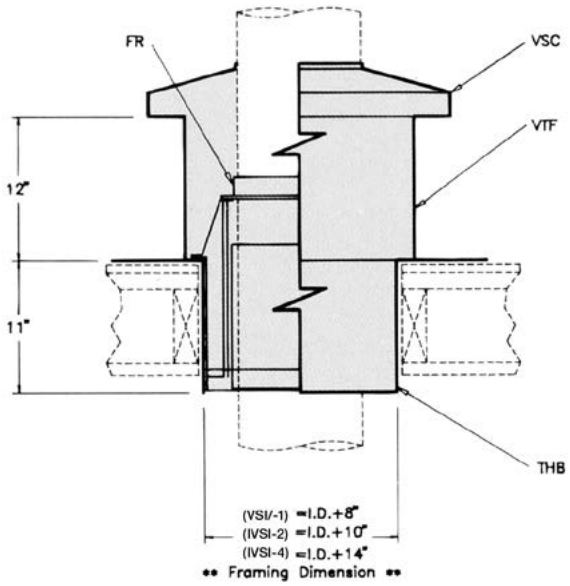
ALZ or Galv	304	316

Model VSI part used for IVSI-1 applications.

Ventilated Roof Thimble Assembly
Code: MVT

For use where pipe passes through a combustible roof or structure. Also guides the chimney 6" above the roof line.





Materials Available:

ALZ or Galv	304	316

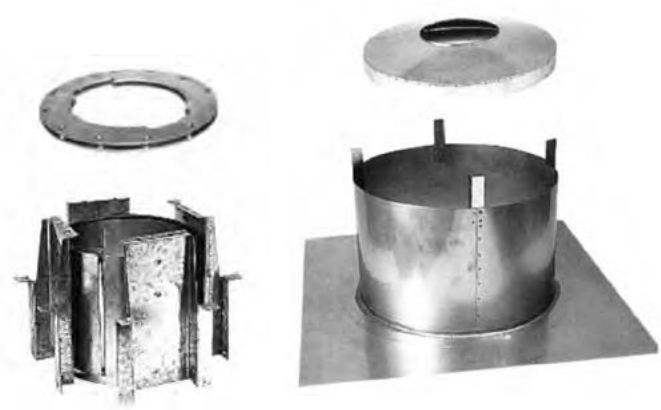
Ordered Part Includes:
One THB, one FR, one VTF, and one VSC.

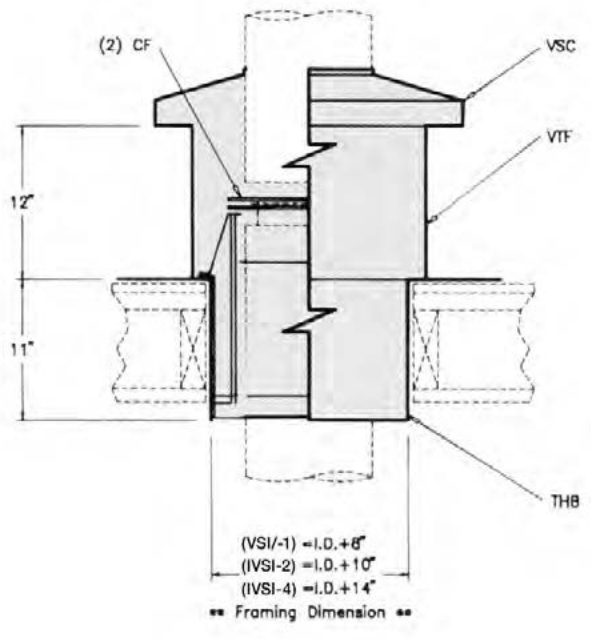
Notes:
1. Model VSI part used for IVSI-1 applications.

Ventilated Roof Support Assembly

Code: MRS

For use where pipe passes through a combustible roof or structure. Supports the chimney 6" above the roof line which may require an expansion joint (AG or BJ) below the roof.





Materials Available:

ALZ or Galv	304	316

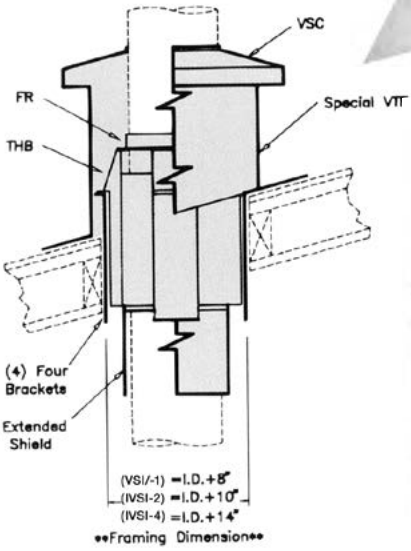
Ordered Part Includes:

One THB, two CF's, one VTF, and one VSC.

Pitched Ventilated Roof Thimble

Code: PVT

For use where pipe passes through a combustible pitched roof or structure. Above 24" sizes and steep pitches are not available.



Materials Available:

ALZ or Galv	304	316

Ordered Part Includes:

One THB, 4 brackets, extended shield, special VTF, one FR, and one VSC.

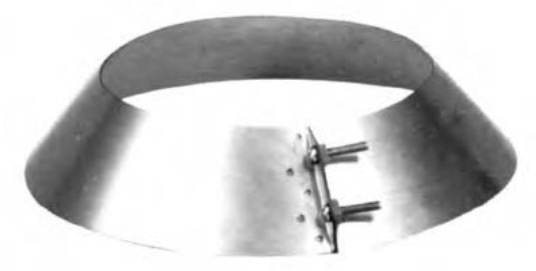
Notes:

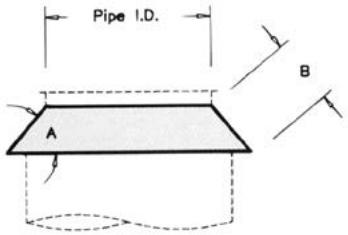
1. Does not provide lateral support. An additional FR is required below the roof.
2. May require extra manufacturing time and is non-returnable.
3. Model VSI part used for IVSI-1 applications.

Open Stack Closure Ring

Code: CR

Protects the insulated space between standard pipe inner and outer. Requires a drain at base of stack.





Materials Available:

316

Ordered Part Includes:

CR, plus hardware.

Notes:
1. Model VSI part used for IVSI-1 applications.

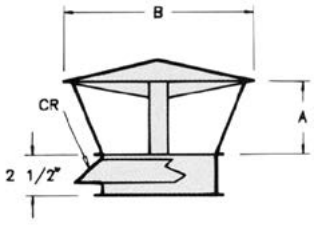
Product	Dimensions	
	A	B
VSI/-C1	50°	3”
IVSI-C2	32°	3½”
IVSI-C4	17°	5¼”

Notes:

Stack Cap

Code: SK

Provides partial protection with low flow resistance. May require a dra
base of stack



Materials Available:

304 and 316 Stainless Steel

Ordered Part Includes:

SK, plus (1) ea: CR, VB, HCB

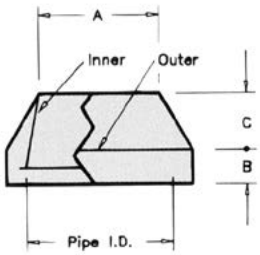
Notes:
1. Model VSI part used for IVSI-1 applications.
2. K = 0.5 Flow Resistance Factor

Product (pipe I. D.)	Dimensions (inches)	
VSI IVSI-C1 IVSI-C2 IVSI-C4	A	B
5	2½	10¼
6	3	10¼
8	4	13⅜
10	5	17
12	6	20½
14	7	24
16	8	27⅜
18	9	30¾
20	10	34⅛
22	11	37⅜
24	12	41
26	13	44⅜
28	14	47⅞
30	15	51¼
32	16	54⅜
36	18	61½
42	21	71¾
48	24	82

Insulated Exit Cone

Code: EC

Will increase stack exit velc
1/2 times. Requires a drain
bottom of stack.



Materials Available:

316 Stainless Steel

Ordered Part Includes:

One inner cone, one outer finish collar, and one VB.

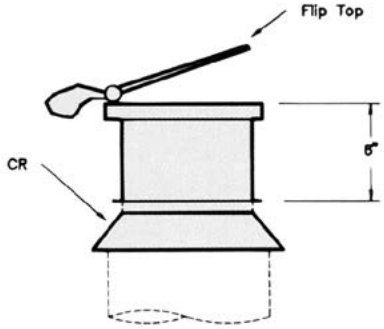
Notes:
1. K = 1.25 Flow Resistance Factors

Product (Pipe I.D.)	Dimensions (Inches)		
All Models	A	B	C
5	4 7/8	4	1 3/8
6	4 7/8	4	1 1/2
8	6 9/16	4	1 3/4
10	8 3/16	4	3 3/8
12	9 7/8	4	3 3/4
14	11 1/2	4	4
16	13 1/16	6	4 3/8
18	14 3/4	6	4 5/8
20	16 5/16	6	5
22	18	6	5 1/4
24	19 5/8	6	5 5/8
26	21 1/4	6	6
28	22 7/8	8	6 1/4
30	24 1/2	8	6 5/8
32	26 1/8	8	6 7/8
36	29 3/8	10	7 1/2
42	34 5/16	12	8 1/2
48	39 3/16	12	9 1/2

Flip Top

Code: FL

Termination that prevents moisture and debris from entering system. Flip top opens with internal pressure and closes when pressure is absent.



Materials Available:

Cast Aluminum (20-24" are Stainless Steel)

Ordered Part Includes:

FL connected to a 316 stainless steel TS (6" high), plus one CR, and one VB.

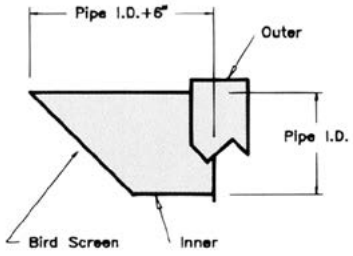
Notes:
1. Available in sizes 5" through 24".

2. Model VSI part used for IVSI-1 applications.

Miter Cut

Code: MC

Used primarily for horizontal engine exhaust termination.



Materials Available:

316 Stainless Steel

Ordered Part Includes:

One inner with bird screen, one outer finish collar, and one VB.

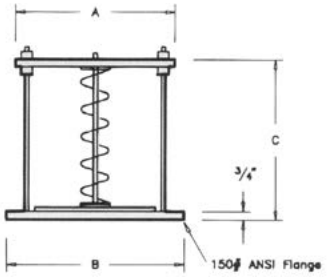
Notes:
1. The 1/2" mesh-pattern bird screen has a 60 percent open area.

2. K = 1.25 Flow Resistance Factor

Explosion Relief Valve

Code: ER

For use on all engine exhaust. Helps control the venting pressure should a backfire occur.



Ordered Part Includes:

ER, plus gasket, bolts, washers and nuts for attachment to FD. ER valve construction is painted steel.

Notes:

1. Explosion Relief Valves are recommended in accordance with NFPA 37.
2. Caution must be used in locating valve in an exhaust system. Hot gases and high velocity could cause injury.
3. Number of Snubber Springs, Tension Springs, Support Rods, and Guide Rods vary with valve size.
4. Model VSI part used for all IVSI apps

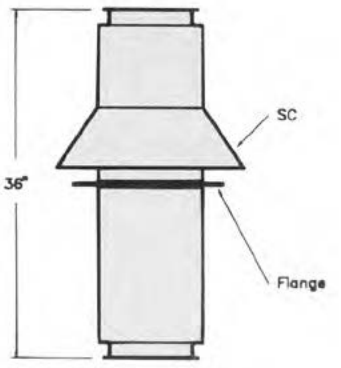
VSI IVSI-C1 (pipe I.D.)	Dimensions (inches) A	B	C	No. of Springs
5	8⅜	10	10¾	1
6	9⅜	11	10¾	1
8	12⅜	13½	10¾	1
10	14	16	10¾	1
12	16¾	19	10¾	2
14	18¼	21	10¾	2
16	20¼	23½	10¾	3
18	22¼	25	10¾	3
20	24¼	27½	10¾	3
22	26¼	29½	10¾	4
24	28½	32	10¾	4

Guy Section

Code: GS

A rigid, factory-welded section for attaching guys to chimney stack.

(insert photo shows storm collar)



Materials Available:

304/ALZ	316/ALZ	304/304	316/316

Ordered Part Includes:

Welded pipe section with flange and storm collar, one CB, and one VB.

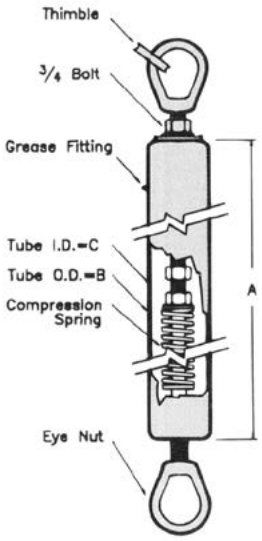
Notes:

1. Flange has 13/16" diameter holes, 30° apart.
2. Flow Resistance Factor (K) is the same as insulated pipe.

Guy Tensioner

Code: GT

Used with GS to allow the stack to expand without stretching the guy wire or buckling the stack.



Notes:

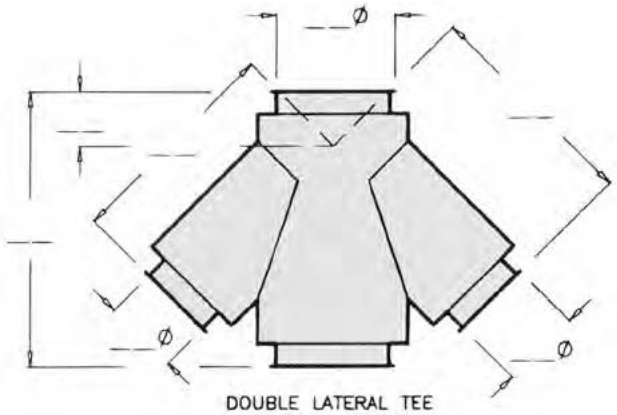
1. Available in four tension capacities as shown below.
2. Guy calculations available upon request.

Dimensions (inches)				
Tension Capacity (lb.)	1050	1350	2100	2700
Tube Length - A	24	38	24	38
Tube O. D.	1⅞	2⅜	1⅞	2⅜
Tube I. D.	1 5/16	2 1/16	1 5/16	2 1/16
Maximum Compression Travel	3	3	3	3
Weight (lb.)	15	25	22	37

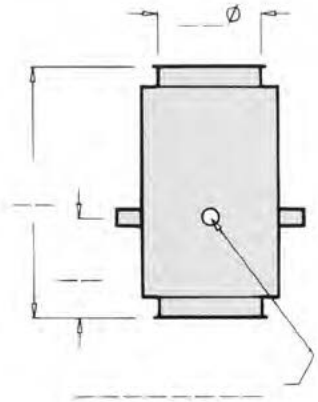
SPECIAL PARTS

Several special parts, such as those shown here, are available upon request.

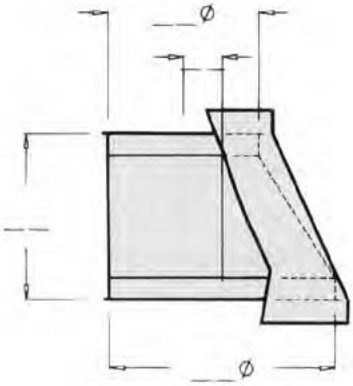
Please provide detail of the required part if not already designed by AMPCO and allow extra manufacturing time. Special parts are non-returnable.



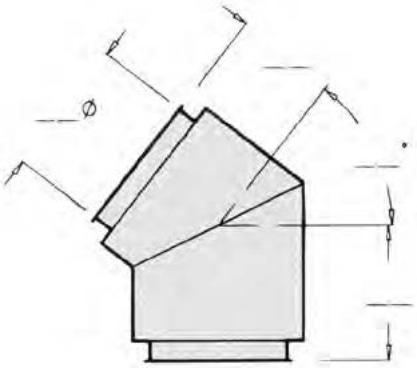
DOUBLE LATERAL TEE
PART CODE: DJL



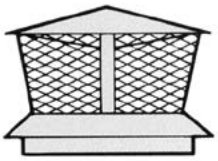
TEST & MONTORING
PORTS AT ANY LOCATION



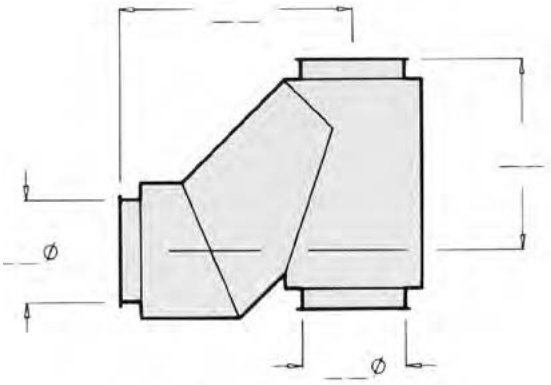
ECCENTRIC
TAPERED INCREASER



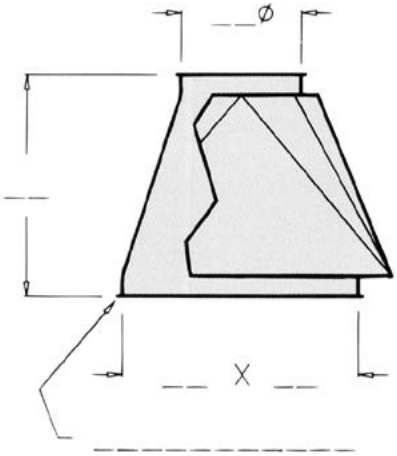
SPECIAL DIMENSIONS
ON ANY FITTING



STACK CAP
WITH BIRDSCREEN



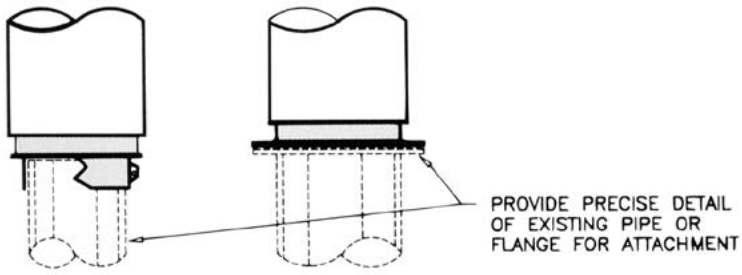
COMBINATION LATERAL TEE AND ELBOW
PART CODE: CL



RECTANGULAR/SQUARE TO
ROUND TRANSITIONS

SINGLE WALL PART CODE: ___x___SWA

DOUBLE WALL PART CODE: ___x___DWA



SPECIAL DIAMETER
SEAL RING

SPECIAL
FLANGE ADAPTER

PRODUCT WEIGHT (Lbs.)

(for shipping weight add 20% to product weight)

PART	5" Chimney					6" Chimney					8" Chimney					10" Chimney					12" Chimney					14" Chimney				
	Code	VSI	-C1	-C2	-C4	Code	VSI	-C1	-C2	-C4	Code	VSI	-C1	-C2	-C4	Code	VSI	-C1	-C2	-C4	Code	VSI	-C1	-C2	-C4	Code	VSI	-C1	-C2	-C4
Double Wall Pipe																														
60" Length	60	-	-	-	-	60	-	-	-	-	60	32	39	46	60	60	43	52	62	81	60	51	62	73	96	60	57	70	82	
42" Length	42	-	-	-	-	42	17	21	24	32	42	23	28	33	43	42	31	38	45	59	42	36	44	52	68	42	40	49	58	76
30" Length	30	10	12	14	19	30	12	15	17	23	30	16	20	23	30	30	20	24	29	38	30	24	29	35	45	30	26	35	37	49
18" Length	18	6	7	9	11	18	7	9	10	13	18	9	11	13	17	18	12	15	17	23	18	15	18	22	28	18	17	21	24	32
Adjustable/Variable Pipe																														
30" Adjustable Pipe	AG30	13	16	19	25	AG30	16	20	23	30	AG30	20	24	29	38	AG30	25	31	36	47	AG30	29	35	42	55	AG30	33	40	48	62
18" Adjustable Pipe	AG18	7	9	10	13	AG18	11	13	16	21	AG18	13	16	19	25	AG18	16	20	23	30	AG18	20	24	29	38	AG18	22	27	32	42
Lined Bellows Joint	BJ	12	15	17	23	BJ	9	11	13	17	BJ	11	13	16	21	BJ	16	20	23	30	BJ	20	24	29	38	BJ	15	18	22	28
30" Variable Pipe	VL30	13	16	19	25	VL30	16	20	23	30	VL30	20	24	29	38	VL30	25	31	36	47	VL30	29	35	42	55	VL30	33	40	48	62
18" Variable Pipe	VL18	7	9	10	13	VL18	11	13	16	21	VL18	13	16	19	25	VL18	16	20	23	30	VL18	20	24	29	38	VL18	22	27	32	42
Double Wall Fittings																														
90º Tee	MT	6	7	9	11	MT	7	9	10	13	MT	10	12	14	19	MT	14	17	20	26	MT	18	22	26	34	MT	23	28	33	43
90º Tee -Grease	GMT	7	9	10	13	GMT	8	10	12	15	GMT	12	15	17	23	GMT	17	21	24	32	GMT	21	26	30	40	GMT	28	34	40	53
45º Tee Lateral	JL	10	12	14	19	JL	12	15	17	23	JL	17	21	24	32	JL	23	28	33	43	JL	31	38	45	59	JL	40	49	58	76
90º Wye	JY	5	6	7	9	JY	6	7	9	11	JY	8	10	12	15	JY	18	22	26	34	JY	20	24	29	38	JY	28	34	40	53
Drain Tee Cap	TC	1	1	1	2	TC	1	1	1	2	TC	2	2	3	4	TC	3	4	4	6	TC	3	4	4	6	TC	5	6	7	9
Cleanout Tee Cap	TCN	1	1	1	2	TCN	1	1	1	2	TCN	2	2	3	4	TCN	3	4	4	6	TCN	3	4	4	6	TCN	5	6	7	9
15º Elbow	EL15	8	10	12	15	EL15	9	11	13	17	EL15	10	12	14	19	EL15	13	16	19	25	EL15	16	20	23	30	EL15	16	20	23	30
30º Elbow	EL30	4	5	6	8	EL30	5	6	7	9	EL30	7	9	10	13	EL30	10	12	14	19	EL30	13	16	19	25	EL30	15	18	22	28
45º Elbow	EL45	6	7	9	11	EL45	7	9	10	13	EL45	10	12	14	19	EL45	13	16	19	25	EL45	17	21	24	32	EL45	20	24	29	38
90º Elbow	EL90	8	10	12	15	EL90	10	12	14	19	EL90	15	18	22	28	EL90	20	24	29	38	EL90	26	32	37	49	EL90	30	37	43	57
Tapered Inc. (2step)	OT	6	7	8	11	OT	7	9	10	13	OT	9	11	13	17	OT	10	12	14	19	OT	12	15	17	23	OT	16	20	23	30
Step Increaser (1Step)	OS	3	4	4	6	OS	4	5	6	8	OS	5	6	7	9	OS	10	12	14	19	OS	13	16	19	25	OS	13	16	19	25
Drain Section	DS	5	6	7	9	DS	5	6	7	9	DS	7	9	10	13	DS	8	10	12	15	DS	10	12	14	19	DS	11	13	16	21
Support/Guide Assem.																														
Half Angle Ring	HR	2	2	3	3	HR	3	3	3	4	HR	3	3	4	4	HR	4	4	4	5	HR	4	4	5	6	HR	5	5	6	7
Full Angle Ring	FR	4	4	5	6	FR	5	5	6	6	FR	6	3	6	8	FR	6	6	8	9	FR	8	8	9	12	FR	9	9	12	13
Plate Support Assem.	PA	7	7	9	11	PA	9	9	11	15	PA	11	11	15	16	PA	15	15	16	19	PA	16	16	19	23	PA	19	19	23	25
Wall Support Assem.	WA	17	17	20	23	WA	20	20	23	27	WA	23	23	27	28	WA	27	27	28	31	WA	28	28	31	34	WA	31	31	34	38
Wall Guide Assembly	WG	17	17	21	23	WG	21	21	23	26	WG	23	23	26	27	WG	26	26	27	29	WG	27	27	29	32	WG	29	29	32	67
Floor Guide Assembly	FG	8	8	10	12	FG	10	10	12	13	FG	12	12	13	14	FG	13	13	14	18	FG	14	14	18	18	FG	18	18	18	21
Connection Accessories																														
Boiler Kit	BK	2	2	2	2	BK	2	2	2	2	BK	2	2	2	2	BK	2	2	2	2	BK	2	2	2	2	BK	2	2	2	2
Seal Ring	SR	1	1	1	1	SR	1	1	1	1	SR	2	2	2	2	SR	2	2	2	2	SR	2	2	2	2	SR	1	1	1	1
Flange Adapter	FD	5	6	7	9	FD	8	10	11	15	FD	10	12	14	19	FD	14	17	20	26	FD	22	27	32	42	FD	21	26	30	40
Clamp Flange	CF	2	2	3	4	CF	3	3	4	6	CF	4	4	6	6	CF	6	6	6	7	CF	6	6	7	8	CF	7	7	8	9
Flanged Hood Trans.	TS	1	1	1	2	TS	1	1	1	2	TS	2	2	3	4	TS	2	2	3	4	TS	2	2	3	4	TS	2	2	3	4
Unflanged Hood Trans	TSU	1	1	1	2	TSU	1	1	1	2	TSU	2	2	3	4	TSU	2	2	3	4	TSU	2	2	3	4	TSU	2	2	3	4
Fan Adapter	FA	4	5	6	8	FA	5	6	7	9	FA	7	9	10	13	FA	12	15	17	23	FA	15	18	22	28	FA	18	22	26	34
Roof Penetrations																														
Storm Collar	SC	2	2	3	3	SC	3	6	3	3	SC	3	3	3	4	SC	3	3	4	4	SC	4	4	4	5	SC	4	4	5	5
Tall Flashing	TF	5	5	6	7	TF	6	6	7	8	TF	7	7	8	9	TF	8	8	9	10	TF	9	9	10	11	TF	10	10	11	12
Pitched Tall Flashing	PTF	6	6	7	8	PTF	7	7	8	9	PTF	8	8	9	10	PTF	9	9	10	11	PTF	10	10	11	12	PTF	11	11	12	13
Ventilated Thimble	THB	17	17	17	18	THB	17	10	18	25	THB	18	18	25	27	THB	25	25	27	30	THB	27	27	30	32	THB	30	30	32	34
Ventilated Tall Flash	VTF	10	10	10	13	VTF	10	10	13	15	VTF	13	13	15	16	VTF	15	15	16	16	VTF	16	16	16	16	VTF	16	16	16	18
Vent. Storm Collar	VSC	3	3	5	5	VSC	5	5	5	5	VSC	5	5	5	6	VSC	5	5	6	6	VSC	6	6	6	8	VSC	6	6	8	8
Vent. Thimble Assem.	MVT	37	37	37	39	MVT	37	37	39	51	MVT	39	39	51	57	MVT	51	51	57	59	MVT	57	57	59	65	MVT	59	59	65	72
Vent. Support Assem.	MRS	37	37	37	39	MRS	37	37	39	51	MRS	39	39	51	57	MRS	51	51	57	59	MRS	57	57	59	65	MRS	59	59	65	72
Pitch. Thimble Assem.	PVT	41	41	41	43	PVT	41	41	43	56	PVT	43	43	56	63	PVT	56	51	63	65	PVT	63	63	65	72	PVT	65	65	72	79
Terminations																														
Closure Ring	CR	1	1	1	1	CR	1	1	1	2	CR	1	1	2	3	CR	2	2	3	3	CR	3	3	3	3	CR	3	3	3	3
Chimney Top	CT	3	-	-	-	CT	3	-	-	-	CT	5	-	-	-	CT	8	-	-	-	CT	12	-	-	-	CT	18	-	-	-
Stack Cap	SK	4	4	4	4	SK	4	4	4	4	SK	6	6	6	6	SK	9	9	9	9	SK	12	12	12	12	SK	15	15	15	15
Exit Cone	EC	1	1	1	2	EC	2	2	3	4	EC	4	6	6	8	EC	5	6	7	9	EC	9	11	13	17	EC	7	9	10	13
Flip Top	FL	3	3	3	3	FL	3	3	3	3	FL	8	8	8	8	FL	10	10	10	10	FL	12	12	12	12	FL	14	14	14	14
Miter Cut	MC	6	6	6	6	MC	6	6	6	6	MC	7	7	7	7	MC	8	8	8	8	MC	9	9	9	9	MC	12	12	12	12
Miscellaneous																														
Guy Section	GS	16	20	23	30	GS	20	24	29	38	GS	25	31	36	47	GS	33	40	48	62	GS	40	49	58	76	GS	45	55	65	85
Explosion Relief Valve	ER	25	-	-	-	ER	30	-	-	-	ER	45	-	-	-	ER	55	-	-	-	ER	90	-	-	-	ER	105	-	-	-
Vee Band	VB	1	1	1	1	VB	1	1	1	1	VB	1	1	1	.1	VB	1	1	1	1	VB	1	1	1	1	VB	1	1	1	1
Overlapping Vee Band	OBV	1	1	1	1	OBV	1	1	1	1	OBV	1	1	1	1	OBV	1	1	1	1	OBV	1	1	1	1	OBV	1	1	1	1
Channel Band	CB	1	1	1	1	CB	1	1	1	1	CB	1	1	1	1	CB	1	1	1	1	CB	1	1	1	1	CB	1	1	1	2
Half Channel Band	HCB	1	1	1	1	HCB	1	1	1	1	HCB	1	1	1	1	HCB	1	1	1	1	HCB	1	1	1	1	HCB	1	1	1	2

PRODUCT WEIGHT (Lbs.)

(for shipping weight add 20% to product weight)

PART	16" Chimney					18" Chimney					20" Chimney					22" Chimney					24" Chimney					26" Chimney				
	Code	VSI	-1	-2	-4	Code	VSI	-1	-2	-4	Code	VSI	-1	-2	-4	Code	VSI	-1	-2	-4	Code	VSI	-1	-2	-4	Code	VSI	-1	-2	-4
Double Wall Pipe																														
60" Length	60	-	-	-	-	60	-	-	-	-	60	-	-	-	-	60	-	-	-	-	60	-	-	-	-	60	-	-	-	-
42" Length	42	46	56	66	87	42	51	62	73	96	42	57	70	82	108	42	62	76	89	117	42	67	82	96	127	42	73	89	105	-
30" Length	30	30	37	43	57	30	34	41	49	64	30	36	44	52	68	30	39	48	56	74	30	42	51	60	79	30	46	56	66	87
18" Length	18	18	22	26	34	18	20	24	29	38	18	24	29	35	45	18	26	32	37	49	18	27	53	39	51	18	30	37	43	57
Adj./Variable Pipe																														
30" Adjustable Pipe	AG30	36	44	52	68	AG30	40	49	58	76	AG30	44	54	63	83	AG30	51	62	73	96	AG30	53	65	76	100	AG30	56	68	81	106
18" Adjustable Pipe	AG18	24	29	35	45	AG18	26	32	37	49	AG18	29	35	42	55	AG18	33	40	48	62	AG18	36	44	52	68	AG18	38	46	55	72
Lined Bellows Joint	BJ	17	21	24	32	BJ	19	23	27	36	BJ	21	26	30	40	BJ	24	29	35	45	BJ	26	32	37	49	BJ	-	-	-	-
30" Variable Pipe	VL30	36	44	52	68	VL30	40	49	58	76	VL30	40	54	63	83	VL30	51	62	73	96	VL30	53	65	76	100	VL30	56	68	81	106
18" Variable Pipe	VL18	24	29	35	45	VL18	26	32	37	49	VL18	29	35	42	55	VL18	33	40	48	62	VL18	36	44	52	68	VL18	38	46	55	72
Double Wall Fittings																														
90º Tee	MT	26	32	37	49	MT	32	39	46	60	MT	36	44	52	68	MT	49	60	71	93	MT	52	63	75	98	MT	62	76	89	117
90º Tee -Grease	GMT	33	40	48	62	GMT	40	49	58	76	GMT	46	56	66	87	GMT	60	73	86	113	GMT	64	78	92	121	GMT	75	92	108	142
45º Tee Lateral	JL	58	71	84	110	JL	63	77	91	119	JL	68	83	98	129	JL	79	96	114	149	JL	89	109	128	168	JL	112	137	161	212
90º Wye	JY	33	40	48	60	JY	43	52	62	81	JY	52	63	75	98	JY	62	76	89	117	JY	72	88	104	136	JY	82	100	118	155
Drain Tee Cap	TC	7	9	10	13	TC	8	10	12	15	TC	10	12	14	19	TC	11	13	16	21	TC	12	15	17	23	TC	13	16	19	25
Cleanout Tee Cap	TCN	7	9	10	13	TCN	8	10	12	15	TCN	10	12	14	19	TCN	11	13	16	21	TCN	12	15	17	23	TCN	13	16	19	25
15º Elbow	EL15	18	22	26	34	EL15	23	28	33	43	EL15	26	32	37	49	EL15	29	35	42	55	EL15	32	39	46	60	EL15	37	45	53	70
30º Elbow	EL30	17	21	24	32	EL30	20	24	29	38	EL30	28	34	40	53	EL30	32	39	46	60	EL30	33	40	48	62	EL30	38	46	55	72
45º Elbow	EL45	25	31	36	47	EL45	26	32	37	49	EL45	31	38	45	59	EL45	42	51	60	79	EL45	41	51	60	79	EL45	50	61	72	95
90º Elbow	EL90	38	46	55	72	EL90	39	48	56	74	EL90	47	57	68	89	EL90	54	66	78	102	EL90	63	77	91	119	EL90	75	92	108	142
Tap. Increas. (2 Step)	OT	16	20	23	30	OT	26	32	37	49	OT	32	39	46	60	OT	38	46	55	72	OT	43	53	62	81	OT	48	59	69	91
Step Increas. (1 Step)	OS	14	17	20	26	OS	16	20	23	30	OS	18	22	26	34	OS	44	54	63	83	OS	19	23	27	81	OS	20	24	29	38
Drain Section	DS	13	16	19	25	DS	13	16	19	25	DS	16	20	23	30	DS	17	21	24	32	DS	18	22	26	34	DS	20	24	29	38
Support/Guide Access																														
Half Angle Ring	HR	6	6	7	7	HR	7	7	7	8	HR	7	7	8	9	HR	8	8	9	9	HR	9	9	9	9	HR	9	9	9	9
Full Angle Ring	FR	12	12	13	14	FR	13	13	14	16	FR	14	14	16	18	FR	16	16	18	18	FR	18	18	18	18	FR	18	18	18	19
Plate Support Asbly	PA	23	23	25	28	PA	25	25	28	31	PA	28	28	31	35	PA	31	31	35	40	PA	35	35	40	42	PA	40	40	42	43
Wall Support Asbly	WA	34	34	38	41	WA	38	38	41	43	WA	41	41	43	45	WA	43	43	45	46	WA	45	45	46	48	WA	46	46	48	51
Wall Guide Asbly	WG	32	32	37	38	WG	37	37	38	38	WG	38	38	38	38	WG	38	38	38	38	WG	38	38	38	38	WG	38	38	39	39
Floor Guide Asbly	FG	18	18	21	23	FG	21	21	23	25	FG	23	25	25	28											FG	28	28	28	30
Connection Acces.																														
Boiler Kit	BK	2	2	2	2	BK	2	2	2	2	BK	2	2	2	2	BK	2	2	2	2	BK	2	2	2	2	BK	2	2	2	2
Seal Ring	SR	1	1	1	1	SR	4	4	4	4	SR	4	4	4	4	SR	4	4	4	4	SR	5	5	5	5	SR	5	5	5	5
Flange Adapter	FD	26	32	37	49	FD	34	41	49	64	FD	32	39	46	60	FD	38	46	55	72	FD	43	52	62	81	FD	47	57	68	89
Clamp Flange	CF	8	8	9	9	CF	9	9	9	10	CF	9	9	10	10	CF	10	10	10	11	CF	10	10	11	11	CF	11	11	11	11
Flanged HoodTran.	TS	2	2	3	4	TS	4	5	6	8	TS	4	5	6	8	TS	4	5	6	8	TS	5	6	7	9	TS	5	6	7	9
Unflan. Hood Tran	TSU	2	2	3	4	TSU	4	5	6	8	TSU	4	5	6	8	TSU	4	5	6	8	TSU	5	6	7	9	TSU	5	6	7	9
Fan Adapter	FA	21	26	30	40	FA	25	31	36	47	FA	31	38	45	59	FA	36	44	52	68	FA	40	49	58	76	FA	46	56	66	87
Roof Penetrations																														
Storm Collar	SC	5	5	5	5	SC	5	5	5	6	SC	5	5	6	6	SC	6	6	6	7	SC	6	6	7	7	SC	7	7	7	8
Tall Flashing	TF	11	11	12	13	TF	12	12	13	16	TF	13	13	16	19	TF	16	16	19	21	TF	19	19	21	22	TF	21	21	22	23
Pitched Tall Flashing	PTF	12	12	13	14	PTF	13	13	14	18	PTF	14	14	18	20	PTF	18	18	20	22	PTF	20	20	22	24	PTF	22	22	24	25
Ventilated Thimble	THB	32	32	34	36	THB	34	34	36	38	THB	36	36	38	40	THB	38	38	40	41	THB	40	40	41	42	THB	41	41	42	44
Ventilated Tall Flash	VTF	16	16	18	18	VTF	18	18	18	20	VTF	18	18	20	20	VTF	20	20	22	26	VTF	22	22	26	28	VTF	26	26	28	30
Vent. Storm Collar	VSC	8	8	8	8	VSC	8	8	8	9	VSC	8	8	9	9	VSC	9	9	9	11	VSC	9	9	11	11	VSC	11	11	11	12
Vent. Thim. Assem.	MVT	65	65	72	73	MVT	72	72	73	82	MVT	73	75	82	89	MVT	82	82	89	92	MVT	89	89	92	96	MVT	92	92	96	100
Vent. Suppor Assem.	MRS	65	65	72	73	MRS	72	72	73	82	MRS	73	75	82	89	MRS	82	82	89	92	MRS	89	89	92	96	MRS	92	92	96	100
Pitched Thim. Assem	PVT	72	72	79	80	PVT	79	79	80	90	PVT	80	80	90	98	PVT	90	90	98	102	PVT	98	98	102	106	PVT	102	102	106	110
Terminations																														
Closure Ring	CR	3	3	3	3	CR	3	3	3	3	CR	3	3	3	3	CR	3	3	3	3	CR	3	3	3	3	CR	3	3	3	4
Chimney Top	CT	-	-	-	-	CT	-	-	-	-	CT	-	-	-	-	CT	-	-	-	-	CT	-	-	-	-	CT	-	-	-	-
Stack Cap	SK	19	19	19	19	SK	21	21	21	21	SK	27	27	27	27	SK	33	33	33	33	SK	40	40	40	40	SK	30	30	30	30
Exit Cone	EC	13	16	19	25	EC	13	16	19	25	EC	14	17	20	26	EC	16	20	23	30	EC	18	22	26	34	EC	26	32	37	49
Flip Top	FL	16	16	16	16	FL	18	18	18	18	FL	20	20	20	20	FL	22	22	22	22	FL	24	24	24	24	FL	26	26	26	26
Miter Cut	MC	15	15	15	15	MC	17	17	17	17	MC	20	20	20	20	MC	22	22	22	22	MC	24	24	24	24	MC	27	27	27	27
Miscellaneous																														
Guy Section	GS	49	60	71	93	GS	54	66	78	102	GS	62	76	89	117	GS	68	83	98	129	GS	70	85	101	132	GS	78	95	112	147
Relief Valve	ER	130	-	-	-	ER	145	-	-	-	ER	200	-	-	-	ER	210	-	-	-	ER	220	-	-	-	ER	-	-	-	-
Vee Band	VB	2	2	2	2	VB	2	2	2	2	VB	2	2	2	2	VB	3	3	3	3	VB	3	3	3	3	VB	3	3	3	3
Overlap Vee Band	OBV	2	2	2	2	OBV	2	2	2	2	OBV	2	2	2	2	OBV	3	3	3	3	OBV	3	3	3	3	OBV	3	3	3	3
Channel Band	CB	1	1	2	2	CB	2	2	2	2	CB	2	2	2	3	CB	2	2	3	3	CB	3	3	3	3	CB	3	3	3	3
Half Channel Band	HCB	1	1	2	2	HCB	2	2	2	2	HCB	2	2	2	3	HCB	2	2	3	3	HCB	3	3	3	3	HCB	3	3	3	3

PRODUCT WEIGHT (Lbs.)

(for shipping weight add 20% to product weight)

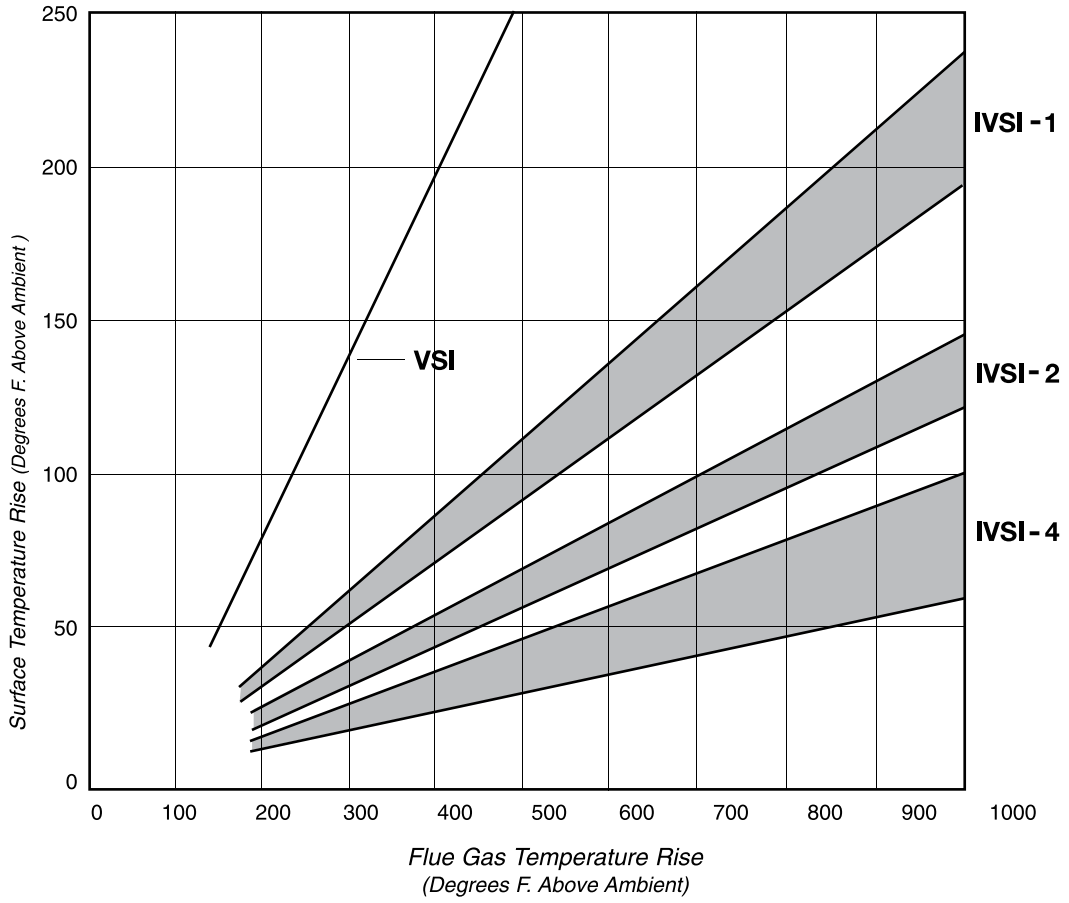
PART	28" Chimney					30" Chimney					32" Chimney					36" Chimney					42" Chimney					48" Chimney				
	Code	VSI	-1	-2	-4	Code	VSI	-1	-2	-4	Code	VSI	-1	-2	-4	Code	VSI	-1	-2	-4	Code	VSI	-1	-2	-4	Code	VSI	-1	-2	-4
Double Wall Pipe																													
60" Length	60	-	-	-	-	60	-	-	-	-	60	-	-	-	-	60	-	-	-	-	60	-	-	-	-	60	-	-	-	-
42" Length	42	78	95	112	-	42	84	102	-	-	42	90	110	-	-	42	-	-	-	-	42	-	-	-	-	42	-	-	-	-
30" Length	30	49	60	71	93	30	53	65	76	100	30	56	68	81	106	30	62	76	89	117	30	86	105	124	163	30	98	120	141	185
18" Length	18	32	39	46	60	18	34	41	49	64	18	35	43	50	66	18	39	48	56	74	18	67	82	96	127	18	76	93	109	144
Adj./Variable Pipe																													
30" Adjustable Pipe	AG30	58	71	84	110	AG30	59	72	85	112	AG30	60	73	86	113	AG30	69	84	99	130	AG30	109	133	157	206	AG30	125	153	180	236
18" Adjustable Pipe	AG18	-	-	-	-	AG18	-	-	-	-	AG18	-	-	-	-	AG18	-	-	-	-	AG18	-	-	-	-	AG18	-	-	-	-
Lined Bellows Joint	BJ	12	15	17	23	BJ	-	-	-	-	BJ	-	-	-	-	BJ	-	-	-	-	BJ	-	-	-	-	BJ	-	-	-	-
30" Variable Pipe	VL30	58	71	84	110	VL30	59	72	85	112	VL30	60	73	86	113	VL30	69	84	99	130	VL30	109	133	157	206	VL30	125	153	180	236
18" Variable Pipe	VL18	40	49	58	76	VL18	44	54	63	83	VL18	48	59	69	91	VL18	56	68	81	106	VL18	78	95	112	147	VL18	89	109	128	168
Double Wall Fittings																													
90º Tee	MT	71	87	102	134	MT	81	99	117	153	MT	90	110	130	170	MT	109	133	157	206	MT	142	173	204	268	MT	220	268	317	416
90º Tee -Grease	GMT	87	106	125	164	GMT	99	121	143	187	GMT	109	133	157	206	GMT	131	160	189	248	GMT	171	209	246	323	GMT	256	312	369	484
45º Tee Lateral	JL	135	165	194	255	JL	151	184	217	285	JL	167	204	240	316	JL	208	254	300	393	JL	248	303	357	469	JL	280	342	403	529
90º Wye	JY	91	111	131	172	JY	98	120	141	185	JY	104	127	150	197	JY	130	159	187	246	JY	162	198	233	306	JY	194	237	279	367
Drain Tee Cap	TC	16	20	23	30	TC	18	22	26	34	TC	19	23	27	36	TC	22	27	32	42	TC	29	35	42	55	TC	36	44	52	68
Cleanout Tee Cap	TCN	16	20	23	30	TCN	18	22	26	34	TCN	19	23	27	36	TCN	22	27	32	42	TCN	29	35	42	55	TCN	36	44	52	68
15º Elbow	EL15	42	51	60	79	EL15	45	55	65	85	EL15	49	60	71	93	EL15	55	67	79	104	EL15	70	85	101	132	EL15	83	101	120	157
30º Elbow	EL30	42	51	60	79	EL30	45	55	65	85	EL30	50	61	72	95	EL30	58	71	84	110	EL30	74	90	107	140	EL30	88	107	127	166
45º Elbow	EL45	57	70	82	108	EL45	61	74	88	115	EL45	65	79	94	123	EL45	80	98	115	151	EL45	101	123	145	191	EL45	121	148	174	229
90º Elbow	EL90	86	105	124	163	EL90	91	111	131	172	EL90	96	117	138	181	EL90	120	146	173	227	EL90	152	185	219	287	EL90	182	222	262	344
Tap. Increas (2 Step)	OT	53	65	76	100	OT	57	70	82	108	OT	60	73	86	113	OT	88	108	127	166	OT	100	122	144	189	OT	-	-	-	-
Step Increas (1 Step)	OS	28	34	40	53	OS	35	43	50	66	OS	42	51	60	79	OS	60	73	86	113	OS	75	92	108	142	OS	90	110	130	170
Drain Section	DS	21	26	30	40	DS	23	28	33	43	DS	25	31	36	47	DS	25	31	36	47	DS	42	51	60	79	DS	48	59	69	91
Support/Guide Acces.																													
Half Angle Ring	HR	9	9	9	10	HR	9	9	10	10	HR	10	10	10	13	HR	10	10	13	14	HR	13	13	14	25	HR	14	14	20	26
Full Angle Ring	FR	18	18	19	19	FR	19	19	19	21	FR	19	19	21	26	FR	21	21	26	29	FR	26	26	29	49	FR	29	29	42	55
Plate Support Assem.	PA	42	42	43	46	PA	43	43	46	54	PA	46	46	54	67	PA	54	54	67	81	PA	67	67	81	127	PA	81	81	117	153
Wall Support Assem.	WA	48	48	51	54	WA	51	51	54	58	WA	54	54	58	74	WA	58	58	74	88	WA	74	74	88	140	WA	88	88	127	166
Wall Guide Assem.	WG	39	39	39	40	WG	39	39	40	43	WG	40	40	43	54	WG	43	43	54	65	WG	54	54	65	102	WG	65	65	94	123
Floor Guide Assem.											FG	31	31	34	42	FG	34	34	42	50	FA	42	42	50	79	FG	50	50	72	95
Connection Access.																													
Boiler Kit	BK	2	2	2	2	BK	2	2	2	2	BK	2	2	2	2	BK	2	2	2	2	BK	2	2	2	2	BK	2	2	2	2
Seal Ring	SR	6	6	6	6	SR	6	6	6	6	SR	7	7	7	7	SR	9	9	9	9	SR	12	12	12	12	SR	14	14	14	14
Flange Adapter	FD	50	61	72	95	FD	59	72	85	112	FD	68	83	98	129	FD	77	94	111	146	FD	86	105	124	163	FD	102	124	147	193
Clamp Flange	CF	11	11	11	12	CF	11	11	12	14	CF	12	12	14	16	CF	14	14	16	19	CF	16	16	19	30	CF	19	19	27	36
Flanged HoodTran.	TS	6	7	9	11	TS	6	7	9	11	TS	7	9	10	13	TS	9	11	13	17	TS	12	15	17	23	TS	14	17	20	26
Unflang. Hood Tran	TSU	6	7	9	11	TSU	6	7	9	11	TSU	7	9	10	13	TSU	9	11	13	17	TSU	12	15	17	23	TSU	14	17	20	26
Fan Adapter	FA	48	59	69	91	FA	55	67	79	104	FA	65	79	94	123	FA	74	90	107	140	FA	83	101	120	157	FA	99	121	143	187
Roof Penetrations																													
Storm Collar	SC	7	7	8	8	SC	8	8	8	9	SC	8	8	9	10	SC	9	9	10	13	SC	10	10	13	19	SC	13	13	19	25
Tall Flashing	TF	22	22	23	25	TF	23	23	25	26	TF	25	25	26	33	TF	26	26	33	34	TF	33	33	34	62	TF	34	34	49	64
Pitched Tall Flashing	PTF	24	24	25	27	PTF	25	25	27	29	PTF	27	27	29	36	PTF	29	29	36	37	PTF	36	36	37	68	PTF	37	37	53	70
Ventilated Thimble	THB	42	42	44	48	THB	44	44	48	54	THB	48	48	54	64	THB	54	54	64	83	THB	64	64	83	121	THB	83	83	120	157
Vent. Tall Flashing	VTF	28	28	30	32	VTF	30	30	32	34	VTF	32	32	34	42	VTF	34	34	42	45	VTF	42	42	45	79	VTF	45	45	65	85
Vent. Storm Collar	VSC	11	11	12	12	VSC	12	12	12	13	VSC	12	12	13	14	VSC	13	13	14	16	VSC	14	14	16	26	VSC	16	16	23	30
Vent. Thim. Assem.	MVT	96	96	100	102	MVT	100	100	102	122	MVT	102	102	122	146	MVT	122	122	146	173	MVT	146	146	173	276	MVT	173	173	249	327
Vent. Supp. Assem.	MRS	96	96	100	102	MRS	100	100	102	122	MRS	102	102	122	146	MRS	122	122	146	173	MRS	146	146	173	276	MRS	173	173	249	327
Pitch ThimAssembly	PVT	-	-	-	-	PVT	-	-	-	-	PVT	-	-	-	-	PVT	-	-	-	-	PVT	-	-	-	-	PVT	-	-	-	-
Terminations																													
Closure Ring	CR	3	3	4	4	CR	4	4	4	4	CR	4	4	4	6	CR	4	4	6	7	CR	6	6	7	11	CR	7	7	10	13
Chimney Top	CT	-	-	-	-	CT	-	-	-	-	CT	-	-	-	-	CT	-	-	-	-	CT	-	-	-	-	CT	-	-	-	-
Stack Cap	SK	50	50	50	50	SK	55	55	55	55	SK	59	59	59	59	SK	67	67	67	67	SK	84	84	84	84	SK	101	101	101	101
Exit Cone	EC	34	41	49	64	EC	41	50	59	77	EC	47	57	68	89	EC	62	76	89	117	EC	78	95	112	147	EC	93	113	134	176
Flip Top	FL	-	-	-	-	FL	-	-	-	-	FL	-	-	-	-	FL	-	-	-	-	FL	-	-	-	-	FL	-	-	-	-
Miter Cut	MC	30	30	30	30	MC	34	34	34	34	MC	41	41	41	41	MC	50	50	50	50	MC	80	80	80	80	MC	98	98	98	98
Miscellaneous																													
Guy Section	GS	82	100	118	155	GS	81	106	125	164	GS	90	110	130	170	GS	101	123	145	191	GS	160	195	230	302	GS	184	224	265	348
Relief Valve	ER	-	-	-	-	ER	-	-	-	-	ER	-	-	-	-	ER	-	-	-	-	ER	-	-	-	-	ER	-	-	-	-
Vee Band	VB	4	4	4	4	VB	4	4	4	4	VB	4	4	4	4	VB	5	5	5	5	VB	5	5	5	5	VB	5	5	5	5
Overlap Vee Band	OBV	4	4	4	4	OBV	4	4	4	4	OBV	4	4	4	4	OBV	5	5	5	5	OBV	5	5	5	5	OBV	5	5	5	5
Channel Band	CB	3	3	3	3	CB	3	3	3	5	CB	3	3	5	6	CB	5	5	6	7	CB	6	6	7	11	CB	7	7	10	13
Half Channel Band	HCB	3	3	3	3	HCB	3	3	3	5	HCB	3	3	5	6	HCB	5	5	6	7	HCB	6	6	7	11	HCB	7	7	10	13

Material Thickness - Model VSI

Air Space	Size	Inner		Outer	
		Gauge*	Material	Gauge*	Material
1”	5” - 32”	20 20	.035” - 304 SS or .035” - 316 SS	24 24	.025” Alum Steel or 304 & 316 SS
1”	36”	20 20	.035” - 304 SS or .035” - 316 SS	21 20	.034” Alum Steel or .035” 304 & 316 SS
1”	42” - 48”	18 18	.048” - 304 SS or .048” - 304 & 316 SS	21 20	.034” Alum Steel or .035” 304 & 316 SS

* Gauge is approximate.

Approximate Outer Pipe Surface Temperatures



Operating Temperatures and Clearances

Criteria	Type L Vent	Restaurant Grease Duct	Building Heating Appliance Chimney*	1400° F. Factory-Built Chimney
Application	Chimneys and stacks for appliances listed suitable for venting with Type L or Type B venting systems.	Cooking Appliances Ventilation Hoods Restaurant Grease Ducts Pizza Oven Exhausts	Low and High Pressure Steam Boilers Diesel and Turbine Exhausts Building Heating Equipment	Industrial Furnaces Processing Equipment Kilns and Ovens Diesel and Turbine
Maximum Operating Temperatures	550° F Continuous 1700° F. Intermittent	500° F. Continuous 2000° F. Intermittent	1000° F. Continuous 1400° F. Intermittent	1400° F. Continuous 1800° F. Intermittent
Clearances To Combustibles: Model VSI	N.A.	5- 10" I.D. = 5" 12" I.D. = 6" 14" I.D. = 7" 16" I.D. = 8" 18" I.D. = 9" 20" I.D. = 10" Over 20" I. D. = **	5"-16" I.D.= 6" 18"-20" I.D.= 7" 22"-26" I.D.= 8" 28"-30" I.D.= 9" 32"-36" I.D.=10" 42" I.D.=11" 48" I.D.=12"	5"-16" I.D.=6" 18" I.D.=8" 20" I.D.=9" 22" I.D.= 10" 24" I.D.=12" 26" I.D.=13" 28" I.D.=14" 30" I.D.=16" Over 30" I.D. = **
Model IVSI-1	5-24" I.D. = 3"	5-6" I.D. = 2" 8-16" I.D. = 3" 18-24" I.D. = 4" 26-32" I.D. = 5" 36" I.D. = 6" 42-48" I.D. = 7"	5-8" I.D. = 1" 10-16" I.D. = 2" 18-24" I.D. = 3" 26-32" I.D. = 4" 36" I.D. = 5" 42-48" I.D. = 6"	5-6" I.D. = 1" 8-16" I.D. = 2" 18-24" I.D. = 3" 26-32" I.D.= 4" 36" I.D. = 5" 42-48" I.D. = 6"
Models IVSI -2 &-4	5-24" I.D. = 2"	5-16" I.D. = 1" 18-20" I.D. = 2" 22-24" I.D.= 3" 26-32" I.D.= 4" 36" I.D. = 5" 42-48" I.D.= 6"	5-16" I.D. = .5" 18" I.D. = 1" 20" I.D. = 1.5" 22"-24" I.D.= 2" 26"-32" I.D. =3" 36" I.D.= 4" 42"-48" I.D.=5"	5-16" I.D. = .5" 18-24" I.D. = 2" 26-32" I.D. = 3" 36" I.D. = 4" 42-48" I.D. = 5"

*Under the "Building Heating Appliance Chimney" Listing, 5" through 24" Model IVSI have qualified for UL's additional, optional "Type HT" rating for chimneys for certain appliance venting applications; especially solid fuel.

** See Installation Instruction Manual

WARRANTY STATEMENT

15&1 COMMERCIAL/INDUSTRIAL WARRANTY

Standard 1-Year Warranty

AMPCO chimney and engine exhaust system components are warranted by Hart & Cooley, Inc. against functional failure due to defects in material and workmanship for a period of one year from date of delivery to the construction site. Functional failure is defined as any failure of the system or component to perform its intended function of exhausting, without adverse leakage, combustion by-products from engine operation or heating equipment. During this period, any system or component supplied by Ampco failing to perform its intended function will be repaired or replaced at the manufacturer's option, following determination by a factory-authorized inspector that a functional failure has occurred. This warranty is limited to repair or replacement of the product plus shipping cost to the failure location. This warranty does not cover any labor costs for removal or replacement of the defective product, nor does this warranty cover any system components not furnished by Ampco and installed as part of the system.

This limited warranty is extended to the purchaser subject to the satisfaction of the following conditions:
1) Generally accepted engineering practices have been followed to determine that sizing and material specifications are suitable for the application and environment involved.
2) The undamaged components have been correctly installed in accordance with the installation instructions published by Ampco at the time of shipment.
3) Damage is not a result of burning garbage, waste oil, #6 oil or any other prohibitive material in the appliance served by the venting system.

Extended 15-Year Warranty

This limited warranty is extended to the purchaser for fifteen years, subject to the satisfaction of the following conditions:
1) System sizing and design has been performed by Ampco personnel, and design parameters provided to Ampco by the responsible engineer were and are accurately representative of the operating conditions.
2) The undamaged components have been correctly installed in accordance with system design and sizing as performed by Ampco and installation instructions published by Ampco at the time of shipment.
3) Proper precautions have been taken to insure that boiler or engine combustion air is free of solvent or refrigerant vapors or any halogenated compound which may cause acid condensates to form within the chimney.
4) Damage is not a result of burning garbage, waste oil, #6 oil or any other prohibitive material in the appliance served by the venting system.
5) Ampco has supplied the entire chimney or exhaust system from boiler/engine outlet to the termination of the stack.
6) Prior to start-up and thereafter, exposed aluminized steel surfaces are protected with a minimum of one base coat of primer and one finish coat of heat-resistant and corrosive-resistant paint at all times. Stainless steel surfaces need not be primed or painted.

The Ampco 15&1 Warranty applies to the following products: N, VSI, IVSI, used in Commercial/Industrial/Institutional applications

LIMITED LIFETIME WARRANTY FOR GREASE DUCT APPLICATIONS

Ampco ("Ampco", "we", "us", "our") warrants to the original owner that Model; N, VSI, IVSI, Z-Clear (Z3 and Z4) products installed in a grease duct application, are to be free from defects in material and workmanship for the life of the product when properly connected to and included as a part of a code compliant commercial kitchen ventilation system for cooking appliances and installed in accordance with our installation instructions and specifications.

- For products installed after January 1, 2008, for a period of Ten (10) years from original installation, we will provide replacement product to the original owner for the product proven defective with a similar or like quantity of available Ampco product, free of charge.
- From the Eleventh (11) through Fifteenth (15) years we will provide replacement product to the original owner at a cost of 75% off of the Manufacturers Suggested List Price in effect on the date the claim is received.
- At expiration of the Fifteen (15) year term, we will provide replacement product to the original owner at a cost of 50% off of the Manufacturers Suggested List Price in effect on the date the claim is received.

WARNING: FAILURE TO INSTALL AMPCO PRODUCTS ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS WILL VOID ALL APPLICABLE WARRANTIES AND MAY RESULT IN FIRE, LOSS OF PROPERTY OR LIFE AND MAY VOID INSURANCE COVERAGE. SEE OUR AMPCO GREASE DUCT INSTALLATION INSTRUCTIONS FOR COMPLETE INSTRUCTIONS. Call 1.800.992.8368 or visit our website at www.ampcostacks.com for a free copy. WE DO NOT GUARANTEE OR IN ANY WAY WARRANT THE INSTALLATION OF AMPCO PRODUCTS DUE TO THE WIDE VARIANCE IN INSTALLATION PRACTICES AND OTHER CONDITIONS BEYOND OUR CONTROL. THIS LIMITED WARRANTY DOES NOT COVER:

(a) costs (labor or otherwise) associated with either removing a previously installed product, installing a replacement product, transportation or return of a product, or transportation of replacement product;
(b) damage to the finish of products caused by the use of improper solvents/chemicals or improper cleaning methods;
(c) damage resulting from failure to reasonably clean, care for or maintain products in accordance with our installation instructions/recommendations;
(d) damage (to products, appliances or structure) based on or resulting from improper installation or repair, misuse or abuse (including, but not limited to, excessive or improper operating condition), or alteration or adjustments other than in conformity with our installation instructions and specifications, whether performed by a contractor, service company, technician, or yourself;
(e) any products that have been moved from their original installation site;
(f) damage to your grease duct that results from accidents such as fire, flood, high winds, "acts of God", or any other contingency beyond our control.
(g) replacement of system sealants as a result of improper installation or a system grease fire.

Disclaimer:

Ampco assumes no liability for incidental or consequential damages of any kind or for any damages resulting in whole or in part from misuse, improper installation, or inadequate maintenance of the system or any component part thereof. This warranty is in lieu of all other express warranties or guarantees of any kind. All implied warranties, including merchantability and fitness, are limited to the duration of the express warranty contained herein. Ampco neither assumes nor does it authorize any other person to assume on its behalf any other liability in connection with the sale of its products.

CLAIM PROCEDURE:

If you believe that a product fails to meet the above limited warranty, notify us in writing at: AMPCO, Attn: WARRANTY CLAIMS DEPARTMENT
5030 Corporate Exchange Blvd. Grand Rapids, MI. 49512. Fax: 1.800-972-1421 Phone: 1.800.624.8642
Notification should include a description of the product, model and part number and how the product fails to meet the above warranty. Upon receipt of a written claim under this limited warranty and evidence of the date of purchase or installation, at our option and in our sole discretion, we will either repair or replace the product with similar or like quantity of available Ampco product per this warranty. Ampco reserves the right to inspect or investigate any warranty claims prior to determining whether to repair or replace a product. If, as determined by Ampco, repair or replacement of the product is not commercially practicable or cannot be completed in a timely manner, we may refund the prorated purchase price paid for the product upon verification by providing a copy of your invoice, receipt of bill of sale. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS LIMITED IN DURATION TO THE WARRANTY PERIOD SPECIFIED ABOVE. WE DISCLAIM ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES AND ANY LOSS OR EXPENSES(S), NOT SPECIFIED ABOVE. SOME STATES MAY NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE EXCLUSIONS OR LIMITATIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE LEGAL RIGHTS WHICH VARY FROM STATE TO STATE OR PROVINCE TO PROVINCE.

WE BUILD TO YOUR DESIGN

Models **VSI & IVSI** are double-wall UL Listed design, factory engineered and built in sizes up to 48" ID. UL tested for positive pressure 60" WC.

- VSI - IVSI Boiler Breeching
- Chimney Stack
- Engine Exhaust
- VSI - IVSI Grease Duct
- Food Service Venting

VSI & IVSI

AMPCO manufactures engineered solutions for venting today's high-efficiency combustion installations. AMPCO engineered systems are manufactured of high technology materials which resist the highly corrosive effects of combustion exhaust. Traditional methods require time-consuming, labor-intensive installations which consume valuable building space and which later require expensive routine maintenance. Utilizing a system of both standard pre-engineered products with custom-manufactured components, AMPCO engineers a cost-effective venting system which consumes little space and which assembles easily in the field.

A full line of the finest products is yours
from Hart & Cooley Inc
HeatFab
Ward Industries
Milcor
Portals Plus
Roof Products & Systems

AMPCO®

Hart & Cooley, Inc.
5030 Corporate Exchange Blvd. • Grand Rapids, MI. 49512
1.800.624.8642 phone • 1.800.972.1421 fax
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